Novel herbicides

The present invention relates to novel, herbicidally active nicotinoyl derivatives, to processes for their preparation, to compositions comprising those compounds, and to their use in controlling weeds, especially in crops of useful plants, or in inhibiting plant growth.

Nicotinoyl derivatives having herbicidal action are described, for example, in WO 00/15615 and WO 01/94339.

There have now been found novel nicotinoyl derivatives having herbicidal and growth-inhibiting properties, the structures of which are distinguished by a double bond in the 6,7-position of the bicyclo[3.2.1]oct-3-en-2-one, bicyclo[3.2.1]nona-3-en-2-one, 8-oxa-bicyclo-[3.2.1]octa-3-en-2-one, 8-aza-bicyclo[3.2.1]octa-3-en-2-one, 8-thia-bicyclo[3.2.1]octa-3-en-2-one and bicyclo[3.2.1]octa-3-ene-2,8-dione group. Some of the compounds of that kind are covered by WO 00/15615 but none of those compounds is specifically disclosed. WO 01/66522 includes pyridine ketones having bicyclo[3.2.1]oct-3-en-2-one groups as intermediates in the preparation of aroyl ketones. There is no mention therein of those compounds having a herbicidal action.

The present invention accordingly relates to compounds of formula I

$$\begin{array}{c|c}
R_2 & R_3 \\
 & Q \\
R_1 & Q
\end{array}$$

wherein

Y is oxygen, NR_{4a}, sulfur, sulfonyl, sulfinyl, C(O), C(=NR_{4b}), C(=CR_{6a}R_{6b}) or a C₁-C₄alkylene or C₂-C₄alkenylene chain, which may be interrupted by oxygen, NR_{5a}, sulfur, sulfonyl, sulfinyl, C(O) or C(=NR_{5b}) and/or mono- or poly-substituted by R₆;

A₁ is nitrogen or CR₇;

A₂ is nitrogen or CR₈;

 R_1 , R_2 , R_6 , R_7 and R_8 are each independently of the others hydrogen, hydroxy, mercapto, NO₂, cyano, halogen, formyl, oxyiminomethylene, C_1 - C_6 alkoxyiminomethylene, C_1 - C_6 alkoxyl, C_2 - C_6 haloalkyl, C_2 - C_6 haloalkynyl, C_2 - C_6 haloalkynyl, C_2 - C_6 alkoxyl, C_3 - C_6 Alxoxyl

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 $C_1-C_6\text{haloalkoxy},\ C_3-C_6\text{alkenyloxy},\ C_3-C_6\text{alkynyloxy},\ C_3-C_6\text{oxacycloalkyl},\ C_3-C_6\text{thiacycloalkyl},\ C_3-C_6\text{dithiacycloalkyl},\ C_3-C_6\text{dithiacycloalkyl},\ C_3-C_6\text{alkoxycarbonyl},\ C_1-C_6\text{alkoxycarbonyl},\ C_1-C_6\text{alkoxycarbonyloxy},\ C_1-C_6\text{alkylcarbonyloxy},\ C_1-C_6\text{alkylthio},\ C_1-C_6\text{alkylsulfinyl},\ C_1-C_6\text{alkylsulfinyl},\ C_3-C_6\text{cycloalkyl},\ tri(C_1-C_6\text{alkyl})\text{silyl},\ di(C_1-C_6\text{alkyl})\text{phenylsilyl},\ tri(C_1-C_6\text{alkyl})\text{silyloxy},\ di(C_1-C_6\text{alkyl})\text{phenylsilyloxy}\ or\ Ar_1;\ or\ R_1,\ R_2,\ R_6,\ R_7,\ R_8\ are\ each\ independently\ of\ the\ others\ a\ C_1-C_6\text{alkyl},\ C_2-C_6\text{alkenyl},\ C_2-C_6\text{alkenyl},\ C_2-C_6\text{alkynyl}\ or\ C_3-C_6\text{cycloalkyl}\ group,\ which\ may\ be\ interrupted\ by\ oxygen,\ sulfur,\ sulfonyl,\ sulfinyl,\ -NR_{11}-\ or\ -C(O)-\ and/or\ mono-,\ di-\ or\ tri-substituted\ by\ hydroxy,\ mercapto,\ NO_2,\ cyano,\ halogen,\ formyl,\ C_1-C_6\text{alkoxy},\ C_3-C_6\text{alkenyloxy},\ C_3-C_6\text{alkynyloxy},\ C_1-C_6\text{haloalkoxy},\ C_1-C_6\text{haloalkoxy},\ C_1-C_4\text{alkoxy-}\ C_1-C_2\text{alkoxy-}\ C_1-C_2\text{alkoxy-}\ C_1-C_4\text{alkylcarbonyl},\ C_1-C_6\text{alkylhio},\ C_1-C_6\text{alkylsulfinyl},\ C_1-C_6\text{alkylosilyl},\ tri(C_1-C_6\text{alkyl})-silyloxy\ or\ Ar_2;}$

or two substituents R_6 at the same carbon atom together form a $-CH_2O$ - or a C_2 - C_5 alkylene chain, which may be interrupted once or twice by oxygen, sulfur, sulfinyl or sulfonyl and/or mono- or poly-substituted by R_{6c} , with the proviso that two hetero atoms may not be located next to one another;

or two substituents R_6 at different carbon atoms together form an oxygen bridge or a C_1 - C_4 alkylene chain, which may in turn be substituted by R_{6c} ;

or R_7 and R_8 together form a -CH₂CH=CH-, -OCH=CH- or -CH=CH-CH=CH- bridge or a C_3 -C₄alkylene chain, which may be interrupted by oxygen or -S(O)_{n1}- and/or mono- or polysubstituted by R_{6d} ;

 R_3 is hydroxy, halogen, mercapto, $C_1\text{-}C_8$ alkylthio, $C_1\text{-}C_8$ alkylsulfinyl, $C_1\text{-}C_8$ alkylsulfinyl, $C_1\text{-}C_8$ haloalkylsulfinyl, $C_1\text{-}C_8$ haloalkylsulfonyl, $C_1\text{-}C_4$ alkoxy- $C_1\text{-}C_4$ alkylsulfinyl, $C_1\text{-}C_4$ alkylsulfonyl, $C_3\text{-}C_8$ alkenylthio, $C_3\text{-}C_8$ alkynylthio, $C_1\text{-}C_4$ alkylthio, $C_1\text{-}C_4$ alkylthio, $C_3\text{-}C_8$ alkenylthio, $C_1\text{-}C_4$ alkylthio, $C_1\text{-}C_4$ alkylthio, $C_1\text{-}C_4$ alkylthio, $C_1\text{-}C_4$ alkylthio, $C_1\text{-}C_4$ alkylsulfinyl, $C_1\text{-}C_4$ alkylsulfonyl, $C_3\text{-}C_8$ cycloalkylthio, $C_3\text{-}C_8$ cycloalkylsulfinyl, $C_3\text{-}C_8$ cycloalkylsulfonyl, phenyl- $C_1\text{-}C_4$ alkylsulfinyl, phenyl- $C_1\text{-}C_4$ alkylsulfonyl, phenyl- $C_1\text{-}C_4$ alkylsulfinyl, phenyl- $C_1\text{-}C_4$ alkylsulfonyl, sit being possible for the phenyl-containing groups to be substituted by one or more $C_1\text{-}C_3$ alkyl, $C_1\text{-}C_3$ haloalkyl, $C_1\text{-}C_3$ alkoxy, $C_1\text{-}C_3$ haloalkoxy, $C_1\text{-}C_4$ alkoxycarbonyl, halogen, cyano, hydroxy or nitro groups;

or R_3 is O^-M^+ , wherein M^+ is an alkali metal cation or an ammonium cation; Q is a radical

$$(Z_1)m_1 \qquad \qquad (Q_1), \qquad (Q_2) \text{ or } \\ X_1 \qquad N \qquad \qquad (Q_2) \text{ or } \\ (O)p_1 \qquad \qquad (Q_2) \text{ or } \\ (O)p_2 \qquad \qquad (Q_2) \qquad \qquad (Q_2$$

$$(Z_3)m_3$$
 (Q_3) , wherein X_3

p₁, p₂ and p₃ are 0 or 1;

m₁, m₂ and m₃ are 1, 2 or 3;

 X_1 , X_2 and X_3 are hydroxy, halogen, C_1 - C_6 alkyl, C_1 - C_6 haloalkyl, C_2 - C_6 alkenyl, C_2 - C_6 haloalkynyl, C_1 - C_6 alkoxy, C_1 - C_6 haloalkoxy, C_1 - C_6 alkylsulfinyl, C_1 - C_6 alkylsulfinyl, C_1 - C_6 haloalkylthio, C_1 - C_6 haloalkylsulfinyl, C_1 - C_6 haloalkylsulfinyl, C_1 - C_6 haloalkylsulfinyl, C_1 - C_6 haloalkylsulfinyl, C_1 - C_6 haloalkylsulfinyl,

 Z_1 , Z_2 and Z_3 are C_1 - C_6 alkyl which is substituted by the following substituents: C_3 - C_4 cycloalkyl or C_3 - C_4 cycloalkyl substituted by halogen, C_1 - C_6 alkyl, C_1 - C_3 alkoxy or C_1 - C_3 alkoxy- C_1 - C_3 alkoxy- C_1 - C_3 alkyl; oxiranyl or oxiranyl substituted by C_1 - C_6 alkyl or C_1 - C_3 alkoxy- C_1 - C_3 alkyl; 3-oxetanyl or 3-oxetanyl substituted by C_1 - C_6 alkyl, C_1 - C_3 alkoxy or C_1 - C_3 alkoxy- C_1 - C_3 alkyl; 3-oxetanyloxy or 3-oxetanyloxy substituted by C_1 - C_6 alkyl, C_1 - C_3 alkoxy or C_1 - C_3 alkoxy- C_1 - C_3 alkoxy or C_3 - C_6 cycloalkyloxy or C_3 - C_4 cycloalkyloxy substituted by halogen, C_1 - C_6 alkyl, C_1 - C_3 alkoxy or C_1 - C_3 alkoxy- C_1 - C_3 alkoxy- C_1 - C_3 alkoxy; C_1 - C_6 haloalkoxy; C_1 - C_6 alkylsulfonyloxy; C_1 - C_6 haloalkylsulfonyloxy; phenylsulfonyloxy; benzylsulfonyloxy; benzylsulfonyloxy; phenoxy; phenylthio; phenylsulfinyl; phenylsulfonyl; Ar_{10} ; Ar_{10} ;

or Z_1 , Z_2 and Z_3 are 3-oxetanyl; 3-oxetanyl substituted by C_1 - C_3 alkoxy, C_1 - C_3 alkoxy- C_1 - C_3 -alkyl or C_1 - C_6 alkyl; C_3 - C_6 cycloalkyl substituted by halogen, C_1 - C_3 alkyl or C_1 - C_3 alkoxy- C_1 - C_3 -alkyl; tri(C_1 - C_6 alkyl)silyl; tri(C_1 - C_6 alkyl)silyloxy or CH=P(phenyl)3;

or Z_1 , Z_2 and Z_3 are a C_1 - C_6 alkyl, C_2 - C_6 alkenyl or C_2 - C_6 alkynyl group, which is interrupted by oxygen, -O(CO)-, -(CO)O-, -O(CO)O-, -N(R₁₄)O-, -ONR₁₅-, sulfur, sulfinyl, sulfonyl, -SO₂NR₁₆-, -NR₁₇SO₂- or -NR₁₈- and is mono- or poly-substituted by L₁; it also being

possible for L_1 to be bonded at the terminal carbon atom of the C_1 - C_6 alkyl, C_2 - C_6 alkenyl or C_2 - C_6 alkynyl group;

or Z_1 , Z_2 and Z_3 are hydrogen, hydroxy, mercapto, NO₂, cyano, halogen, formyl, C₁-C₆alkyl, C₁-C₆haloalkyl, C₂-C₆alkenyl, C₂-C₆haloalkenyl, C₂-C₆haloalkynyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkoxycarbonyl, C₁-C₆alkylcarbonyl, C₁-C₆alkylthio, C₁-C₆alkylsulfonyl, C₁-C₆alkylsulfinyl, NR₂₂R₂₃, phenyl which may be mono- or poly-substituted by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃haloalkoxy, halogen, cyano, hydroxy or nitro, C₃-C₆cycloalkyl, C₅-C₆cycloalkyl substituted by C₁-C₃alkoxy, C₁-C₃alkoxy-C₁-C₃alkyl or C₁-C₆alkyl, or Ar₅, O-Ar₆, N(R₂₄)Ar₇ or S(O)n₆Ar₈;

 $L_1 \text{ is hydrogen, halogen, hydroxy, amino, formyl, nitro, cyano, mercapto, carbamoyl, } P(O)(OC_1-C_6alkyl)_2, C_1-C_6alkoxy, C_1-C_6haloalkoxy, C_1-C_6alkoxycarbonyl, C_2-C_6alkenyl, } C_2-C_6haloalkenyl, C_2-C_6haloalkenyl, C_3-C_6cycloalkyl, halo-substituted } C_3-C_6cycloalkyl, C_3-C_6alkenyloxy, C_3-C_6alkynyloxy, C_3-C_6haloalkenyloxy, cyano-C_1-C_6alkoxy, } C_1-C_6alkoxy-C_1-C_6alkoxy, C_1-C_6alkoxy, C_1-C_6alkoxy, C_1-C_6alkoxy, C_1-C_6alkoxy, C_1-C_6alkoxy, C_1-C_6alkylsulfinyl-C_1-C_6alkoxy, } C_1-C_6alkylsulfonyl-C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfonyl, C_1-C_6alkylsulfinyl, } C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfinyl, } C_1-C_6alkylsulfinyl, C_1-C_6alkylsulfinyl, } C_1-C_6alkyl, } C_1-C_3alkoxy } C_1-C_3alkoxy-C_1-C_3alkoxy-C_1-C_3alkyl, } C_1-C_6alkylsulfinyl, } C_1-C$

 R_{4a} and R_{5a} are each independently of the other hydrogen, C_1 - C_6 alkyl, C_1 - C_6 haloalkyl, cyano, formyl, C_1 - C_6 alkylcarbonyl, C_1 - C_6 alkoxycarbonyl, carbamoyl, C_1 - C_6 alkylaminocarbonyl, di(C_1 - C_6 alkylamino)sulfonyl, C_3 - C_6 cycloalkylcarbonyl, C_1 - C_6 -alkylsulfonyl, phenylcarbonyl, phenylaminocarbonyl or phenylsulfonyl, it being possible for the phenyl groups to be mono- or poly-substituted by C_1 - C_6 alkyl, C_1 - C_6 haloalkyl, C_1 - C_6 -alkoxy, C_1 - C_6 haloalkoxy, halogen, cyano, hydroxy or nitro;

 R_{4b} and R_{5b} are each independently of the other hydroxy, C_1 - C_6 alkoxy, C_3 - C_6 alkenyloxy, C_3 - C_6 alkynyloxy or benzyloxy, it being possible for the benzyl group to be mono- or polysubstituted by C_1 - C_6 alkyl, C_1 - C_6 haloalkyl, C_1 - C_6 alkoxy, C_1 - C_6 haloalkoxy, halogen, cyano, hydroxy or nitro;

 R_9 , R_{11} , R_{13} , R_{16} , R_{17} , R_{18} , R_{20} , R_{23} and R_{24} are each independently of the others hydrogen, C_1 - C_6 alkyl, Ar_9 , C_1 - C_6 haloalkyl, C_1 - C_6 alkylcarbonyl, C_1 - C_6 alkoxycarbonyl, C_1 - C_6 alkylsulfonyl,

phenyl, it being possible for the phenyl group in turn to be mono- or poly-substituted by C_1 - C_6 alkyl, C_1 - C_6 alkyl, C_1 - C_6 alkyl, C_1 - C_6 alkyl or C_1 - C_6 alkyl or C_1 - C_6 alkylcarbonyl; or together with R_{6b} is a C_2 - C_5 alkylene chain;

R_{6b}, R_{6d}, R₁₀, R₁₂ and R₂₂ are each independently of the others hydrogen or C₁-C₆alkyl; R_{8c} , R_{14} , R_{15} , R_{19} and R_{21} are each independently of the others C_1 - C_6 alkyl or C_1 - C_6 haloalkyl; Ar₁, Ar₂, Ar₃, Ar₄, Ar₅, Ar₆, Ar₇, Ar₈, Ar₉, Ar₁₀, Ar₁₁ and Ar₁₂ are each independently of the others a five- to ten-membered, monocyclic or fused bicyclic ring system, which may be aromatic, partially saturated or fully saturated and may contain from 1 to 4 hetero atoms selected from nitrogen, oxygen, sulfur, C(O) and C(=NR₂₅), and each ring system may contain not more than two oxygen atoms, not more than two sulfur atoms, not more than two C(O) groups and not more than one C(=NR₂₅) group, and each ring system may itself be mono- or poly-substituted by C₁-C₆alkyl, C₁-C₆haloalkyl, C₂-C₆alkenyl, C₂-C₆haloalkenyl, C_2 - C_6 alkynyl, C_2 - C_6 haloalkynyl, C_1 - C_6 alkoxy, C_1 - C_6 haloalkoxy, C_3 - C_6 alkenyloxy, C_3 - C_6 alkynyloxy, mercapto, amino, hydroxy, C₁-C₆alkylthio, C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C₃-C₆alkynylthio, C₁-C₃alkoxy-C₁-C₃alkylthio, C₁-C₄alkylcarbonyl-C₁-C₃alkylthio, C_1 - C_4 alkoxycarbonyl- C_1 - C_3 alkylthio, cyano- C_1 - C_3 alkylthio, C_1 - C_6 alkylsulfinyl, C_1 - C_6 haloalkylsulfinyl, C_1 - C_6 alkylsulfonyl, C_1 - C_6 haloalkylsulfonyl, aminosulfonyl, C_1 - C_2 alkylaminosulfonyl, N,N-di(C1-C2alkyl)aminosulfonyl, di(C1-C4alkyl)amino, halogen, cyano, nitro or phenyl, it being possible for the phenyl group in turn to be substituted by hydroxy, C₁-C₆alkylthio, C_1 - C_6 haloalkylthio, C_3 - C_6 alkenylthio, C_3 - C_6 haloalkenylthio, C_3 - C_6 alkynylthio, C₁-C₃alkoxy-C₁-C₃alkylthio, C₁-C₄alkylcarbonyl-C₁-C₃alkylthio, C₁-C₄alkoxycarbonyl-C₁-C₃alkylthio, cyano-C₁-C₃alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C6haloalkylsulfonyl, aminosulfonyl, C₁-C2alkylaminosulfonyl, N,N-di(C1-C2alkyl)aminosulfonyl, di(C1-C4alkyl)amino, halogen, cyano or nitro, and the substituents at the nitrogen atom in the heterocyclic ring being other than halogen, and two oxygen atoms not being located next to one another;

 R_{25} is hydrogen, hydroxy, C_1 - C_6 alkyl, C_1 - C_6 alkyl, C_1 - C_6 alkoxy, C_1 - C_6 alkylsulfonyl; and n_1 is 0, 1 or 2; and n_6 is 0, 1 or 2; and agronomically acceptable salts/isomers/enantiomers/tautomers of those compounds.

The alkyl groups appearing in the substituent definitions may be straight-chain or branched and are, for example, methyl, ethyl, n-propyl, isopropyl, n-butyl, sec-butyl, isobutyl, tert-butyl, pentyl, hexyl, heptyl and octyl and the branched isomers thereof. Alkoxy, alkenyl and alkynyl radicals are derived from the mentioned alkyl radicals. The alkenyl and alkynyl groups may

be mono- or poly-unsaturated. C_1 - C_4 alkylene and C_2 - C_4 alkenylene chains may likewise be straight-chain or branched.

Halogen is generally fluorine, chlorine, bromine or iodine, preferably fluorine or chlorine. The same is true of halogen in conjunction with other meanings, such as haloalkyl or halophenyl.

Haloalkyl groups preferably have a chain length of from 1 to 6 carbon atoms. Haloalkyl is, for example, fluoromethyl, difluoromethyl, trifluoromethyl, chloromethyl, dichloromethyl, trichloromethyl, 2,2,2-trifluoroethyl, 2-fluoroethyl, 2-chloroethyl, pentafluoroethyl, 1,1-difluoro-2,2,2-trichloroethyl, 2,2,3,3-tetrafluoroethyl or 2,2,2-trichloroethyl; preferably trichloromethyl, difluoromethyl, trifluoromethyl or dichlorofluoromethyl.

In the context of the present invention, the term "mono- or poly-substituted" is generally to be understood as meaning mono- to penta-substituted, especially mono- to tri-substituted.

As haloalkenyl there come into consideration alkenyl groups mono- or poly-substituted by halogen, halogen being fluorine, chlorine, bromine or iodine, and especially fluorine or chlorine, for example 2,2-difluoro-1-methylvinyl, 3-fluoropropenyl, 3-chloropropenyl, 3-bromopropenyl, 2,3,3-trifluoropropenyl, 2,3,3-trichloropropenyl and 4,4,4-trifluoro-but-2-en-1-yl. Of the C₃-C₈alkenyl groups mono-, di- or tri-substituted by halogen preference is given to those having a chain length of from 3 to 5 carbon atoms.

As haloalkynyl there come into consideration, for example, alkynyl groups mono- or polysubstituted by halogen, halogen being bromine, iodine and especially fluorine or chlorine, for example 3-fluoropropynyl, 3-chloropropynyl, 3-bromopropynyl, 3,3,3-trifluoropropynyl and 4,4,4-trifluoro-but-2-yn-1-yl. Of the alkynyl groups mono- or poly-substituted by halogen preference is given to those having a chain length of from 3 to 5 carbon atoms.

Ar₁, Ar₂, Ar₃, Ar₄, Ar₅, Ar₆, Ar₇, Ar₈, Ar₉, Ar₁₀, Ar₁₁ and Ar₁₂ are, for example, phenyl, naphthyl or the following heterocyclic groups: (1-methyl-1H-pyrazol-3-yl)-; (1-ethyl-1H-pyrazol-3-yl)-; (1-propyl-1H-pyrazol-3-yl)-; (1+pyrazol-3-yl)-; (1+pyrazol-3-yl)-; (1+pyrazol-1-yl)-; (3-methyl-1H-pyrazol-1-yl)-; (3-dimethyl-1H-pyrazol-1-yl)-; (3-isoxazolyl)-; (3-methyl-3-isoxazolyl)-; (3-methyl-5-isoxazolyl)-; (5-methyl-1H-pyrrol-2-yl)-; (1+pyrrol-1-yl)-; (1-methyl-1H-pyrrol-3-yl)-; (2-furanyl)-; (3-methyl-2-furanyl)-; (3-furanyl)-; (3-methyl-1H-imidazol-2-yl)-; (1-methyl-1H-imidazol-2-yl)-; (1-methyl-1H-imidazol-2-yl)-;

methyl-1H-imidazol-5-yl)-; (4-methyl-2-oxazolyl)-; (5-methyl-2-oxazolyl)-; (2-oxazolyl)-; (2methyl-5-oxazolyl)-; (2-methyl-4-oxazolyl)-; (4-methyl-2-thiazolyl)-; (5-methyl-2-thiazolyl)-; (2thiazolyl)-; (2-methyl-5-thiazolyl)-; (2-methyl-4-thiazolyl)-; (3-methyl-4-isothiazolyl)-; (3methyl-5-isothiazolyl)-; (5-methyl-3-isothiazolyl)-; (1-methyl-1H-1,2,3-triazol-4-yl)-; (2-methyl-2H-1,2,3-triazol-4-yl)-; (4-methyl-2H-1,2,3-triazol-2-yl)-; (1-methyl-1H-1,2,4-triazol-3-yl)-; (1,5dimethyl-1H-1,2,4-triazol-3-yl)-; (3-methyl-1H-1,2,4-triazol-1-yl)-; (5-methyl-1H-1,2,4-triazol-1-yl)-; (4,5-dimethyl-4H-1,2,4-triazol-3-yl)-; (4-methyl-4H-1,2,4-triazol-3-yl)-; (4H-1,2,4-triazol-4-yl)-; (5-methyl-1,2,3-oxadiazol-4-yl)-; (1,2,3-oxadiazol-4-yl)-; (3-methyl-1,2,4-oxadiazol-5yl)-; (5-methyl-1,2,4-oxadiazol-3-yl)-; (4-methyl-3-furazanyl)-; (3-furazanyl)-; (5-methyl-1,2,4oxadiazol-2-yl)-; (5-methyl-1,2,3-thiadiazol-4-yl)-; (1,2,3-thiadiazol-4-yl)-; (3-methyl-1,2,4thiadiazol-5-yl)-; (5-methyl-1,2,4-thiadiazol-3-yl)-; (4-methyl-1,2,5-thiadiazol-3-yl)-; (5-methyl-1,3,4-thiadiazol-2-yl)-; (1-methyl-1H-tetrazol-5-yl)-; (1H-tetrazol-5-yl)-; (5-methyl-1H-tetrazol-1-yl)-; (2-methyl-2H-tetrazol-5-yl)-; (2-ethyl-2H-tetrazol-5-yl)-; (5-methyl-2H-tetrazol-2-yl)-; (2H-tetrazol-2-yl)-; (2-pyridyl)-; (6-methyl-2-pyridyl)-; (4-pyridyl)-; (3-pyridyl)-; (6-methyl-3pyridazinyl)-; (5-methyl-3-pyridazinyl)-; (3-pyridazinyl)-; (4,6-dimethyl-2-pyrimidinyl)-; (4methyl-2-pyrimidinyl)-; (2-pyrimidinyl)-; (2-methyl-4-pyrimidinyl)-; (2-chloro-4-pyrimidinyl)-; (2,6-dimethyl-4-pyrimidinyl)-; (4-pyrimidinyl)-; (2-methyl-5-pyrimidinyl)-; (6-methyl-2-pyrazinyl)-; (2-pyrazinyl)-; (4,6-dimethyl-1,3,5-triazin-2-yl)-; (4,6-dichloro-1,3,5-triazin-2-yl)-; (1,3,5-triazin-2-yl)-; (4-methyl-1,3,5-triazin-2-yl)-; (3-methyl-1,2,4-triazin-5-yl)-; (3-methyl-1.2.4-triazin-6-yl)-;

and Ar₁₀ may also be, for example, a carbonyl-containing heterocyclic group

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$$X_{4}$$
 S R_{26} X_{4} R_{26} R_{26} R_{26} R_{27} R_{27} R_{27} R_{28} R_{28} R_{27} R_{28} R_{27} R_{28} R_{28} R_{28} R_{27} R_{28} R_{28} R_{28} R_{27} R_{28} R_{28}

wherein each R_{26} is methyl, each R_{27} and each R_{28} are independently hydrogen, C_1 - C_3 alkyl, C_1 - C_3 alkylthio or trifluoromethyl, X_4 is oxygen or sulfur and r = 1, 2, 3 or 4.

Where no free valency is indicated in those definitions of Ar₁, Ar₂, Ar₃, Ar₄, Ar₅, Ar₆, Ar₇, Ar₈,

Ar₉, Ar₁₀, Ar₁₁ and Ar₁₂, for example as in O, the linkage site is located at the carbon O.

atom labelled "CH" or in a case such as, for example, at the bonding site indicated at the bottom left.

The alkali metal cation M^{+} (for example in the meaning of $O^{-}M^{+}$ in R_{3}) denotes in the context of the present invention preferably the sodium cation or the potassium cation.

Alkoxy groups preferably have a chain length of from 1 to 6 carbon atoms. Alkoxy is, for example, methoxy, ethoxy, propoxy, isopropoxy, n-butoxy, isobutoxy, sec-butoxy and tert-butoxy and the isomers of pentyloxy and hexyloxy; preferably methoxy and ethoxy. Alkyl-carbonyl is preferably acetyl, propionyl or pivaloyl. Alkoxycarbonyl is, for example, methoxy-carbonyl, ethoxycarbonyl, propoxycarbonyl, isopropoxycarbonyl, n-butoxycarbonyl, isobutoxycarbonyl, sec-butoxycarbonyl or tert-butoxycarbonyl; preferably methoxycarbonyl or ethoxycarbonyl. Haloalkoxy groups preferably have a chain length of from 1 to 6 carbon atoms. Haloalkoxy is e.g. fluoromethoxy, difluoromethoxy, trifluoromethoxy, 2,2,2-trifluoroethoxy, 1,1,2,2-tetrafluoroethoxy, 2-fluoroethoxy, 2-chloroethoxy, and trifluoromethoxy.

Alkylthio groups preferably have a chain length of from 1 to 8 carbon atoms. Alkylthio is, for example, methylthio, ethylthio, propylthio, isopropylthio, n-butylthio, isobutylthio, sec-butylthio or tert-butylthio, preferably methylthio and ethylthio. Alkylsulfinyl is, for example, methylsulfinyl, ethylsulfinyl, propylsulfinyl, isopropylsulfinyl, n-butylsulfinyl, isobutylsulfinyl, sec-

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butylsulfinyl, tert-butylsulfinyl; preferably methylsulfinyl and ethylsulfinyl. Alkylsulfonyl is, for example, methylsulfonyl, ethylsulfonyl, propylsulfonyl, isopropylsulfonyl, n-butylsulfonyl, isobutylsulfonyl, sec-butylsulfonyl or tert-butylsulfonyl; preferably methylsulfonyl or ethylsulfonyl.

Alkylamino is, for example, methylamino, ethylamino, n-propylamino, isopropylamino or the isomers of butylamine. Dialkylamino is, for example, dimethylamino, methylethylamino, diethylamino, n-propylmethylamino, di-butylamino and di-isopropylamino. Preference is given to alkylamino and dialkylamino groups – including as a component of (N-alkyl)sulfonylamino and N-(alkylamino)sulfonyl groups, such as (N,N-dimethyl)sulfonylamino and N,N-(dimethyl-amino)sulfonyl – each having a chain length of from 1 to 4 carbon atoms.

Alkoxyalkoxy groups preferably have a chain length of from 1 to 8 carbon atoms. Examples of alkoxyalkoxy are: methoxymethoxy, methoxyethoxy, methoxypropoxy, ethoxymethoxy, ethoxyethoxy, propoxymethoxy and butoxybutoxy. Alkoxyalkyl groups have a chain length of preferably from 1 to 6 carbon atoms. Alkoxyalkyl is, for example, methoxymethyl, methoxyethyl, ethoxymethyl, ethoxyethyl, n-propoxymethyl, n-propoxyethyl, isopropoxymethyl or isopropoxyethyl.

Alkylthioalkyl groups preferably have from 1 to 8 carbon atoms. Alkylthioalkyl is, for example, methylthiomethyl, methylthioethyl, ethylthiomethyl, ethylthioethyl, n-propylthiomethyl, isopropylthioethyl, butylthiomethyl, butylthioethyl or butylthiobutyl.

The cycloalkyl groups having up to 8 carbon atoms preferably have from 3 to 6 ring carbon atoms, for example cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl. A cycloalkyl group having up to 8 carbon atoms also includes a C_3 - C_6 alkyl group bonded by way of a methylene or ethylene bridge, for example cyclopropylmethyl, cyclobutylmethyl and cyclopentylmethyl. Cycloalkyl groups, as well as, for example, the oxygen-containing oxiranyl, oxiranylmethyl, 3-oxetanyl, 2- and 3-tetrahydrofuranyl, 2-(2- and 3-tetrahydrofuranyl)methyl, 2-, 3- and 4-tetrahydropyranyl, 2-(2-tetrahydropyranyl)methyl, 1,3-dioxolanyl, 2-(1,3-dioxolanyl)methyl, 4-(1,3-dioxolanyl)methyl, 1,3-dioxanyl, 1,4-dioxanyl and similar saturated groups — especially as a component of Ar_5 in L_1 — can also be mono- or poly-substituted by C_1 - C_3 alkyl, preferably mono- to tetra-substituted by methyl.

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Phenyl, including as a component of a substituent such as phenoxy, benzyl, benzyloxy, benzyl, phenylthio, phenylalkyl, phenoxyalkyl, may be in substituted form. The substituents may in that case be in the ortho-, meta- and/or para-position(s). Preferred substituent positions are the ortho- and para-positions relative to the ring linkage site. The phenyl groups are preferably unsubstituted or mono- or di-substituted, especially unsubstituted or mono-substituted.

Z₁, Z₂ and Z₃ as a C₁-C₆alkyl group which is interrupted by oxygen, -O(CO)-, -(CO)O-, -O(CO)O-, -N(R₁₄)O-, -ONR₁₅-, sulfur, sulfinyl, sulfonyl, -SO₂NR₁₆-, -NR₁₇SO₂- or -NR₁₈- and may be mono- or poly-substituted by a group L₁ when that C₁-C₆alkyl group is interrupted by oxygen, -O(CO)O-, sulfur, sulfinyl or sulfonyl, is to be understood as meaning, for example, a bidentate bridging member -CH2OCH2-, -CH2CH2OCH2-, -CH2OCH2CH2-, -CH₂OCH₂CH₂CH₂-, -CH₂OC(O)CH₂-, -CH₂(CO)OCH₂-, -CH₂O(CO)OCH₂-, -CH₂SCH₂-, $-CH_2N(CH_3)SO_2CH_2-$, $-CH_2N(SO_2CH_3)CH_2-$, $-CH_2N(C(O)CH_3)CH_2-$, -CH₂N(COOCH₂CH₃)CH₂- or -CH₂N(COOCH₃)CH₂-, the left-hand bonding site being bonded to the pyridine moiety and the right-hand side to the substituent L_1 . And Z_1 , Z_2 and Z_3 as a C₂-C₆alkenyl or C₂-C₆alkynyl group which is interrupted by oxygen, -O(CO)-, -(CO)O-, -O(CO)O-, -N(R₁₄)O-, -ONR₁₅-, sulfur, sulfinyl, sulfonyl, -SO₂NR₁₆-, -NR₁₇SO₂- or -NR₁₈- and may be mono- or poly-substituted by a group L₁ is to be understood as meaning, for example, a bidentate bridging member -CH=CHCH₂OCH₂- or -C≡CCH₂OCH₂-. Such an unsubstituted or L_1 -substituted C_1 - C_6 alkyl, C_2 - C_6 alkenyl or C_2 - C_6 alkynyl group Z_1 , Z_2 or Z_3 which is interrupted by oxygen, -O(CO)-, -(CO)O-, -O(CO)O-, -N(R₁₄)O-, -ONR₁₅-, sulfur, sulfinyl, sulfonyl, -SO₂NR₁₆-, -NR₁₇SO₂- or -NR₁₈- can be either straight-chain or branched, for example as in the case of the bidentate bridging members -CH(CH₃)OCH₂- and -CH₂OCH(CH₃)CH₂-.

The compounds of formula I may occur in various tautomeric forms such as, for example, when R_3 is hydroxy and Q is Q_1 , in formulae I', I", I" and I"", preference being given to formulae I' and I".

Since compounds of formula I may also contain asymmetric carbon atoms, for example in the case of R_1 , R_2 , A_1 , A_2 and Y, their substituents R_6 , R_7 and R_8 , and also in the case of carbon atoms carrying X_1 , X_2 , X_3 , Z_1 , Z_2 and Z_3 , and accordingly in any sulfoxides, all the stereoisomers and all chiral <R> and <S> forms are also included. Also included are all constitutional isomeric <E> and <Z> forms in respect of any -C=C- and -C=N- double bonds.

Since R_1 and R_2 , like R_7 and R_8 in A_1 and A_2 , may each independently of the other have the same or different meanings, the compound of formula I may also occur in various constitutional isomeric forms. The invention therefore relates also to all those constitutional isomeric forms in respect of the spatial arrangement of A_1 and A_2 and the substituents R_1 and R_2 in respect of the substituent R_3 as shown in formulae D_1 to D_4 .

$$Q \xrightarrow{R_3} R_2$$

$$Q \xrightarrow{R_3} R_1$$

$$Q \xrightarrow{R_3} R_1$$

$$Q \xrightarrow{R_3} R_2$$

$$Q \xrightarrow{R_3} R_1$$

$$Q \xrightarrow{R_3} R_2$$

$$Q \xrightarrow{R_3} R_3$$

$$Q \xrightarrow{R_3} R_2$$

$$Q \xrightarrow{R_3} R_3$$

$$Q \xrightarrow{R_3} R_2$$

$$Q \xrightarrow{R_3} R_3$$

The same applies also to the spatial arrangement of the bridging member Y in respect of the carbon atoms carrying R₁ and R₂ when Y is a C₁-C₄alkylene or C₂-C₄alkenylene chain which may be interrupted by oxygen, NR5a, sulfur, sulfonyl, sulfinyl, C(O) or C(=NR5b) and/or monoor poly-substituted by R₆.

The substituent R_3 may also be located on the bridging member, as has already been shown above in formula I" wherein R_3 is hydroxy. The present invention relates also to those constitutional isomeric forms D_5

$$Q \xrightarrow{R_3} O \xrightarrow{R_2} R_2 \qquad (D_5)$$

of the compounds of formula I.

That arrangement of A_1 , A_2 , Y and the substituents R_1 , R_2 , R_4 , R_5 , R_6 , R_7 and R_8 relates accordingly also to all possible tautomeric and stereoisomeric forms of the compounds used as intermediates.

The present invention relates also to the salts which the compounds of formula I are able to form with amines, alkali metal and alkaline earth metal bases or quaternary ammonium bases. Among the alkali metal and alkaline earth metal bases as salt formers, special mention should be made of the hydroxides of lithium, sodium, potassium, magnesium, barium and calcium, but especially the hydroxides of sodium, barium and potassium.

Examples of amines suitable for ammonium salt formation include ammonia as well as primary, secondary and tertiary C₁-C₁₈alkylamines, C₁-C₄hydroxyalkylamines and C₂-C₄-alkoxyalkylamines, for example methylamine, ethylamine, n-propylamine, isopropylamine, the four butylamine isomers, n-amylamine, isoamylamine, hexylamine, heptylamine, octylamine, nonylamine, decylamine, pentadecylamine, hexadecylamine, heptadecylamine, octadecylamine, methylethylamine, methylisopropylamine, methylhexylamine, methylnonylamine, methylpentadecylamine, methyloctadecylamine, ethylbutylamine, ethylheptylamine, ethyloctylamine, diethylamine, diethylamine, di-n-propylamine, disopropylamine, di-n-butylamine, di-n-amylamine, diisoamylamine, dihexylamine, diheptylamine, dioctylamine, ethanolamine, n-propanolamine, isopropanolamine, N,N-diethanolamine, N-ethylpropanolamine, N-butylethanolamine, allylamine, n-butenyl-2-amine, n-pentenyl-2-amine, 2,3-dimethylbutenyl-2-amine, dibutenyl-2-amine, n-hexenyl-2-amine, propylenediamine, trimethylamine, triethylamine, tri-n-propylamine, triisopropylamine, tri-n-butylamine, triisobutylamine, tri-sec-butylamine, tri-n-amylamine, methoxyethylamine

and ethoxyethylamine; heterocyclic amines, for example pyridine, quinoline, isoquinoline, morpholine, piperidine, pyrrolidine, indoline, quinuclidine and azepine; primary arylamines, for example anilines, methoxyanilines, ethoxyanilines, o-, m- and p-toluidines, phenylene-diamines, benzidines, naphthylamines and o-, m- and p-chloroanilines; but especially triethylamine, isopropylamine and diisopropylamine.

Preferred quaternary ammonium bases suitable for salt formation correspond, for example, to the formula $[N(R_aR_bR_cR_d)]OH$ wherein R_a , R_b , R_c and R_d are each independently of the others C_1 - C_4 alkyl. Further suitable tetraalkylammonium bases with other anions can be obtained, for example, by anion exchange reactions.

Preference is given to compounds of formula I wherein

 $R_1,\,R_2,\,R_6,\,R_7$ and R_8 are each independently of the others hydrogen, hydroxy, mercapto, NO $_2$, cyano, halogen, formyl, $C_1\text{-}C_6$ alkyl, $C_1\text{-}C_6$ haloalkyl, $C_2\text{-}C_6$ alkenyl, $C_2\text{-}C_6$ haloalkenyl, $C_2\text{-}C_6$ haloalkynyl, $C_2\text{-}C_6$ haloalkynyl, $C_1\text{-}C_6$ alkoxy, $C_1\text{-}C_6$ haloalkoxy, $C_3\text{-}C_6$ alkenyloxy, $C_3\text{-}C_6$ -alkynyloxy, $C_3\text{-}C_6$ coxacycloalkyl, $C_3\text{-}C_6$ thiacycloalkyl, $C_3\text{-}C_6$ dioxacycloalkyl, $C_3\text{-}C_6$ dithiacycloalkyl, $C_3\text{-}C_6$ coxathiacycloalkyl, $C_1\text{-}C_6$ alkoxycarbonyl, $C_1\text{-}C_6$ alkylcarbonyl, $C_1\text{-}C_6$ alkylcarbonyloxy, $C_1\text{-}C_6$ alkylcarbonyloxy or A_1 ; or R_1 , R_2 , R_6 , R_7 , R_8 are each independently of the others a $C_1\text{-}C_6$ alkyl, $C_2\text{-}C_6$ alkenyl, $C_2\text{-}C_6$ alkynyl or $C_3\text{-}C_6$ cycloalkyl group, which may be interrupted by oxygen, sulfur, sulfonyl, sulfinyl, -NR $_{11}$ - or -C(O)- and/or mono-, di- or tri-substituted by hydroxy, mercapto, NO $_2$, cyano, halogen, formyl, $C_1\text{-}C_6$ alkoxy, $C_3\text{-}C_6$ alkenyloxy, $C_3\text{-}C_6$ alkynyloxy, $C_1\text{-}C_6$ haloalkoxy, $C_1\text{-}C_6$ alkoxy- $C_1\text{-}C_2$ alkoxy- $C_1\text{-}C_2$ alkoxy, $C_1\text{-}C_6$ alkylcarbonyl, $C_1\text{-}C_6$ alkylcarbonyl, $C_1\text{-}C_6$ alkylloinyl, $C_1\text{-}C_6$ alkylsulfonyl, $NR_{12}R_{13}$, $C_1\text{-}C_6$ alkyl, $C_2\text{-}C_6$ alkenyl, $C_2\text{-}C_6$ alkenyl, $C_2\text{-}C_6$ alkynyl, $C_1\text{-}C_6$ alkylloinyl, $C_1\text{-}C_6$ alkylloinyl, tri($C_1\text{-}C_6$ alkyl)-silyloxy or A_1 ;

or two substituents R_6 at the same carbon atom together form a –CH₂O- or a C₂-C₅alkylene chain, which may be interrupted once or twice by oxygen, sulfur, sulfonyl or sulfinyl and/or mono- or poly-substituted by R_{6c} , with the proviso that two hetero atoms may not be located next to one another;

or two substituents R_6 at different carbon atoms together form an oxygen bridge or a C_1 - C_4 alkylene chain, which may in turn be substituted by R_{6c} ;

or R_7 and R_8 together form an oxygen bridge, a –CH=CH-CH=CH- bridge or a C_3 - C_4 alkylene chain, which may be interrupted by oxygen or –S(O)_{n1}- and/or mono- or poly-substituted by R_{8d} ;

Z₁, Z₂ and Z₃ are each independently of the others C₁-C₃alkoxy-C₁-C₃alkyl-substituted C₃-C₆cycloalkyl, tri(C₁-C₆alkyl)silyl, tri(C₁-C₆alkyl)silyloxy or CH=P(phenyl)₃: or Z_1 , Z_2 and Z_3 are a C_1 - C_6 alkyl, C_2 - C_6 alkenyl or C_2 - C_6 alkynyl group, which is interrupted by oxygen, -O(CO)-, -(CO)O-, -O(CO)O-, -N(R_{14})-O-, -O-NR₁₅-, sulfur, sulfinyl, sulfonyl, -SO $_2$ NR $_{16}$ -, -NR $_{17}$ SO $_2$ - or -NR $_{18}$ - and is mono- or poly-substituted by L $_1$; L_1 is halogen, hydroxy, amino, formyl, nitro, cyano, mercapto, carbamoyl, $P(O)(OC_1-C_6alkyl)_2,\ C_1-C_6alkoxy,\ C_1-C_6haloalkoxy,\ C_1-C_6alkoxycarbonyl,\ C_2-C_6alkenyl,$ $C_2\text{-}C_6\text{haloalkenyl},\ C_2\text{-}C_6\text{alkynyl},\ C_2\text{-}C_6\text{haloalkynyl},\ C_3\text{-}C_6\text{cycloalkyl},\ \text{halo-substituted}\ C_3\text{-}C_6\text{-}C_$ cycloalkyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, C₃-C₆haloalkenyloxy, cyano-C₁-C₆alkoxy, $C_1-C_6 alkoxy-C_1-C_6 alkoxy, \ C_1-C_6 alkylthio-C_1-C_6 alkoxy, \ C_1-C_6 alkylsulfinyl-C_1-C_6 alkoxy, \ C_1-C_6 a$ $C_1-C_6 alky lsulfonyl-C_1-C_6 alkoxy, \ C_1-C_6 alkoxy, \ C_1-C_6 alkoxy, \ C_1-C_6 alky lsulfonyl-C_1-C_6 alky$ $C_1-C_6 alkylcarbonyl,\ C_1-C_6 alkylthio,\ C_1-C_6 alkylsulfinyl,\ C_1-C_6 alkylsulfonyl,\ C_1-C_6 haloalkylthio,\ C_1-C_6 alkylsulfonyl,\ C_2-C_6 haloalkylthio,\ C_3-C_6 alkylsulfonyl,\ C_3-C_6 haloalkylthio,\ C_3-C_6$ C₁-C₅haloalkylsulfinyl, C₁-C₅haloalkylsulfonyl or oxiranyl, which may in turn be substituted by C₁-C₀alkyl, C₁-C₃alkoxy or C₁-C₃alkoxy-C₁-C₃alkyl, or (3-oxetanyl)-oxy, which may in turn be substituted by C_1 - C_6 alkyl, C_1 - C_3 alkoxy or C_1 - C_3 alkoxy- C_1 - C_3 alkyl, or benzoyloxy, benzyloxy, benzylthio, benzylsulfinyl, benzylsulfonyl, C₁-C₀alkylamino, di(C₁-C₀alkyl)amino, R₁₀S(O)₂O, $R_{20}N(R_{21})SO_{2}$ -, rhodano, phenyl, phenoxy, phenylthio, phenylsulfinyl, phenylsulfonyl or Ar_4 , it being possible for the phenyl-containing groups in turn to be substituted by one or more C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano, hydroxy or nitro groups;

or, when R_1 and R_2 are hydrogen, methyl, halogen or C_1 - C_3 alkoxycarbonyl and at the same time Y is other than C_1 - C_2 alkylene which may be substituted by hydrogen, halogen or methyl, or is other than oxygen, sulfur, sulfonyl, sulfinyl, C(O) or NR_{4a} wherein R_{4a} is hydrogen, C_1 - C_4 alkyl, formyl or C_1 - C_4 alkylcarbonyl,

 L_1 may additionally be hydrogen and Z_1 , Z_2 and Z_3 may additionally be hydrogen, hydroxy, mercapto, NO₂, cyano, halogen, formyl, C_1 - C_6 alkyl, C_1 - C_6 haloalkyl, C_2 - C_6 alkenyl, C_2 - C_6 haloalkynyl, C_1 - C_6 alkynyl, C_1 - C_6 alkynyl, C_1 - C_6 alkynyl, C_1 - C_6 alkylcarbonyl, C_1 - C_6 alkylthio, C_1 - C_6 alkylsulfonyl, C_1 - C_6 alkylsulfinyl, NR₂₂R₂₃, phenyl which may be mono- or poly-substituted by C_1 - C_3 alkyl, C_1 - C_3 haloalkyl, C_1 - C_3 alkoxy, C_1 - C_3 haloalkoxy, halogen, cyano, hydroxy or nitro, or C_3 - C_6 cycloalkyl, C_3 - C_6 cycloalkyl substituted by C_1 - C_3 alkoxy, C_1 - C_3 alkoxy- C_1 - C_3 alkyl or C_1 - C_6 alkyl, 3-oxetanyl, 3-oxetanyl substituted by C_1 - C_3 alkoxy, C_1 - C_3 alkoxy- C_1 - C_3 alkyl or C_1 - C_6 alkyl; or C_1 - C_6 alkyl; or C_1 - C_6 alkyl, C_1 - C_3 alkoxy, C_1 - C_3 alkoxy, C_1 - C_3 alkoxy- C_1 - C_3 alkyl or C_1 - C_6 alkyl; or C_1 - C_6 alkyl; or C_1 - C_6 alkyl, C_1 - C_3 alkoxy, C_1 - C_3 alkoxy- C_1 - C_3 alkoxy- C_1 - C_3 alkyl or C_1 - C_6 alkyl; or C_1 - C_6 alkyl, C_1 - C_3 alkoxy, C_1 - C_3 alkoxy- C_1 - C_3 alkyl or C_1 - C_6 alkyl; or C_1 - C_6 alkyl, C_1 - C_3 alkoxy, C_1 - C_3 alkoxy- C_1 - C_3 alkoxy- C_1 - C_3 alkyl or C_1 - C_6 alkyl; or C_1 - C_6 alkyl, C_1 - C_3 alkoxy- C_1 - C_3 alkoxy- C_1 - C_3 alkyl or C_1 - C_6 alkyl; or C_1 - C_6 alkyl, C_1 - C_1

 R_9 , R_{11} , R_{13} , R_{23} , R_{16} , R_{17} , R_{18} , R_{20} and R_{24} are each independently of the others hydrogen, C_1 - C_6 alkyl, C_1 - C_6 alkylcarbonyl, C_1 - C_6 alkylcarbonyl, C_1 - C_6 alkylcarbonyl, C_1 - C_6 alkylcarbonyl, phenyl, it being possible for the phenyl group in turn to be mono- or poly-substituted by

 C_1 - C_6 alkyl, C_1 - C_6 haloalkyl, C_1 - C_6 alkoxy, C_1 - C_6 haloalkoxy, halogen, cyano, hydroxy or nitro, or Ar_9 ;

 R_{6a} and R_{6b} are each independently of the other hydrogen or C_1 - C_6 alkyl; or R_{6a} and R_{6b} together are a C_2 - C_5 alkylene chain;

 R_{6c} , R_{14} , R_{15} , R_{19} and R_{21} are each independently of the others C_1 - C_6 alkyl or C_1 - C_6 haloalkyl; R_{6d} , R_{10} , R_{12} and R_{22} are each independently of the others hydrogen or C_1 - C_6 alkyl; Ar₁, Ar₂, Ar₃, Ar₄, Ar₅, Ar₆, Ar₇, Ar₈ and Ar₉ are each independently of the others a five- to tenmembered, monocyclic or fused bicyclic ring system, which may be aromatic, partially saturated or fully saturated and may contain from 1 to 4 hetero atoms selected from nitrogen, oxygen, sulfur, C(O) and C(=NR₂₅), and each ring system contains not more than two oxygen atoms and not more than two sulfur atoms, and each ring system may itself be mono- or poly-substituted by C_1 - C_6 alkyl, C_1 - C_6 haloalkyl, C_2 - C_6 alkenyl, C_2 - C_6 haloalkenyl, C_2 - C_6 alkynyl, C_2 - C_6 haloalkynyl, C_1 - C_6 alkoxy, C_1 - C_6 haloalkoxy, C_3 - C_6 alkenyloxy, C_3 - C_6 alkynyloxy, mercapto, amino, hydroxy, C₁-C₆alkylthio, C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C_3 - C_6 alkynylthio, C_1 - C_3 alkoxy- C_1 - C_3 alkylthio, C_1 - C_4 alkylcarbonyl- C_1 - C_3 alkylthio, C_1 - C_4 alkoxycarbonyl- C_1 - C_3 alkylthio, cyano- C_1 - C_3 alkylthio, C_1 - C_6 alkylsulfinyl, C_1 - C_6 haloalkylsulfinyl, C_1 - C_6 alkylsulfonyl, C_1 - C_6 haloalkylsulfonyl, aminosulfonyl, C_1 - C_2 alkylaminosulfonyl, N,N-di(C₁-C₂alkyl)aminosulfonyl, di(C₁-C₄alkyl)amino, halogen, cyano, nitro or phenyl, it being possible for the phenyl group in turn to be substituted by hydroxy, C₁-C₆alkylthio, C_1 - C_6 haloalkylthio, C_3 - C_6 alkenylthio, C_3 - C_6 haloalkenylthio, C_3 - C_6 alkynylthio, C_1 - C_3 $alkoxy-C_1-C_3alkylthio,\ C_1-C_4alkylcarbonyl-C_1-C_3alkylthio,\ C_1-C_4alkoxycarbonyl-C_1-C_3alkylthio,\ C_1-C_4alkoxycarbonyl-C_1-C_3alkylthio,\ C_1-C_4alkylcarbonyl-C_1-C_3alkylthio,\ C_1-C_4alkylcarbonyl-C_1-C_3alkylcarbonyl-C_1-C_3alkylcarbonyl-C_1-C_3alkylcarbonyl-C_1-C_3alkylcarbonyl-C_1-C_3alkylcarbonyl-C_1-C_3alkylcarbonyl-C_1-C_3alkylcarbonyl-C_1-C_3alkylcarbonyl-C_1-C_3alkylcarbonyl-C_1-C_$ $cyano-C_1-C_3 alkylthio,\ C_1-C_6 alkylsulfinyl,\ C_1-C_6 haloalkylsulfinyl,\ C_1-C_6 alkylsulfonyl,\ C_1-C_6 haloalkylsulfinyl,\ C_1-C_6 alkylsulfonyl,\ C_2-C_6 haloalkylsulfinyl,\ C_3-C_6 alkylsulfonyl,\ C_3-C_6 haloalkylsulfinyl,\ C_3-C_6 alkylsulfonyl,\ C_3-C_6 haloalkylsulfinyl,\ C_3-C_6 alkylsulfonyl,\ C_3-C_6 haloalkylsulfinyl,\ C_3-C_6 alkylsulfonyl,\ C_3-C_6 haloalkylsulfonyl,\ C_$ alkylsulfonyl, aminosulfonyl, C₁-C₂alkylaminosulfonyl, N,N-di(C₁-C₂alkyl)aminosulfonyl, di(C₁-C₄alkyl)amino, halogen, cyano or nitro, and the substituents at the nitrogen atom in the heterocyclic ring being other than halogen.

Special mention should be made of compounds of formula I wherein L_1 is hydrogen only when Z_1 , Z_2 and Z_3 are a C_1 - C_6 alkyl group which is interrupted by -O(CO)-, -(CO)O-, -N(R₁₄)O-, -ONR₁₅-, -SO₂NR₁₆-, -NR₁₇SO₂- or -NR₁₈-, or is a C_2 - C_6 alkenyl or C_2 - C_6 alkynyl group which is interrupted by oxygen, -O(CO)-, -(CO)O-, -O(CO)O-, -N(R₁₄)O-, -ONR₁₅-, sulfur, sulfinyl, sulfonyl, -SO₂NR₁₆-, -NR₁₇SO₂- or -NR₁₈-; and when, further, either R₁ and R₂ are hydrogen or methyl, or R₁ is halogen or R₂ is C_1 - C_3 alkoxycarbonyl, and at the same time Y is other than C_1 - C_2 alkylene which may be substituted by halogen or methyl, or Y is other than oxygen, sulfur, sulfonyl, sulfinyl, C(O) or NR_{4a} wherein R_{4a} is hydrogen, C_1 - C_4 alkyl, formyl or C_1 - C_4 alkylcarbonyl.

An outstanding group of compounds of formula I comprises those compounds wherein Z_1 , Z_2 , Z_3 are C_1 - C_3 alkylene which is substituted by the following substituents: halogen, hydroxy, amino, formyl, nitro, cyano, mercapto, carbamoyl, P(O)(OC₁-C₆alkyl)₂, C₁-C₆alkoxy, C_1 - C_6 haloalkoxy, C_1 - C_6 alkoxycarbonyl, C_2 - C_6 alkenyl, C_2 - C_6 haloalkenyl, C_2 - C_6 alkynyl, C_2 - C_6 haloalkynyl, C_3 - C_6 cycloalkyl, halo-substituted C_3 - C_6 cycloalkyl, C_3 - C_6 alkenyloxy, C_3 - C_6 alkynyloxy, C_3 - C_6 haloalkenyloxy, cyano- C_1 - C_6 alkoxy, C_1 - C_6 alkoxy- C_1 - C_6 alkoxy, C_1 - C_6 alkylthio- $C_{1}-C_{6}alkoxy,\ C_{1}-C_{6}alkylsulfinyl-C_{1}-C_{6}alkoxy,\ C_{1}-C_{6}alkoxy,\ C_{1}-C_{6}alkoxy,\ C_{1}-C_{6}alkoxy$ $carbonyl-C_1-C_6 alkylcarbonyloxy,\ C_1-C_6 alkylcarbonyloxy,\ C_1-C_6 alkylcarbonyl,\ C_1-C_6 alkylcarbonyloxy,\ C_1-C_6 alkyl$ sulfinyl, C_1 - C_6 alkylsulfonyl, C_1 - C_6 haloalkylthio, C_1 - C_6 haloalkylsulfinyl, C_1 - C_6 haloalkylsulfonyl or oxiranyl, which may in turn be substituted by C₁-C₃alkyl, C₁-C₃alkoxy or C₁-C₃alkoxy-C₁-C₃alkyl, or (3-oxetanyl)-oxy, which may in turn be substituted by C₁-C₀alkyl, C₁-C₃alkoxy or C₁-C₃alkoxy-C₁-C₃alkyl, or benzoyloxy, benzyloxy, benzylthio, benzylsulfinyl, benzylsulfonyl, C_1 - C_6 alkylamino, di(C_1 - C_6 alkyl)amino, $R_{19}S(O)_2O$, $R_{20}N(R_{21})SO_2$ -, rhodano, phenyl, phenoxy, phenylthio, phenylsulfinyl, phenylsulfonyl or Ar4, it being possible for the phenylcontaining groups in turn to be substituted by one or more C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano, hydroxy or nitro groups; or, when R₁ and R₂ are hydrogen, methyl, halogen or C₁-C₃alkoxycarbonyl and at the same time Y is other than C₁-C₂alkylene which may be substituted by halogen or methyl, or is other than oxygen, sulfur, sulfonyl, sulfinyl, C(O) or NR_{4a} wherein R_{4a} is hydrogen, C_1 - C_4 -

alkyl, formyl or C_1 - C_4 alkylcarbonyl, L_1 may additionally be hydrogen and Z_1 , Z_2 and Z_3 may additionally be hydrogen, hydroxy, mercapto, NO_2 , cyano, halogen, formyl, C_1 - C_6 alkyl, C_1 - C_6 haloalkyl, C_2 - C_6 alkenyl, C_2 - C_6 haloalkynyl, C_1 - C_6 alkynyl, C_1 - C_6 alkylcarbonyl, C_1 - C_6 alkylthio, C_1 - C_6 alkylsulfonyl, C_1 - C_6 alkylsulfinyl, $NR_{22}R_{23}$, phenyl which may be mono- or poly-substituted by C_1 - C_3 alkyl, C_1 - C_3 haloalkyl, C_1 - C_3 alkoxy, C_1 - C_3 -haloalkoxy, halogen, cyano, hydroxy or nitro, or C_3 - C_6 cycloalkyl, C_3 - C_6 cycloalkyl substituted by C_1 - C_3 alkoxy, C_1 - C_3 alkyl or C_1 - C_3 alkyl, C_1 - C_3 alkoxy, C_1 - C_3 alkoxy, C_1 - C_3 alkyl or C_1 - C_6 alkyl, or

Preferred compounds of formula I are those wherein p is 0. Preferably at least one group Z_1 , Z_2 or Z_3 is in the ortho-position relative to the carbonyl group; in preferred compounds, in addition, m_1 , m_2 and m_3 are the number 1. Also preferred are compounds of formula I wherein Q is a group Q_1 or Q_2 , especially the group Q_1 .

Also preferred are those compounds of formula I wherein Y is oxygen, NCO₂methyl, NSO₂CH₃, NC(O)CH₃, sulfur, sulfinyl, sulfonyl, C(O) or a C₁-C₂alkylene chain. Outstanding

compounds are those wherein Y is a C₁-C₂alkylene chain or oxygen, and wherein A₁ is CR₂, A₂ is CR₈ and R₁, R₂, R₆, R₇, R₈ are each independently of the others hydrogen or methyl, especially Y is methylene or ethylene and R₁, R₂, R₆, R₇, R₈ are each hydrogen.

Especially interesting compounds of formula I are those wherein Z_1 is C_1 - C_3 alkylene which may be interrupted by oxygen, especially a bidentate group of form -CH2-, -CH2CH2-, -OCH₂-, -OCH₂CH₂-, -CH₂O-, -CH₂CH₂O-, -CH₂OCH₂- or -CH₂CH₂CH₂O-, and L₁ is preferably hydrogen, halogen, cyano, C₁-C₅alkyl, C₂-C₅alkenyl, C₂-C₅haloalkenyl, C₂-C₅alkynyl, C_2 - C_6 haloalkynyl, C_1 - C_6 alkoxy, C_1 - C_6 haloalkoxy, C_1 - C_6 alkoxy- C_1 - C_6 alkoxy. Especially preferred are compounds of formula I wherein Z₁ or Z₁-L₁ is CH₃, CH₂CH₃, CH₂CH₂CH₃, $\mathsf{CHC}(\mathsf{CH_3})_2,\ \mathsf{CH_2OCH_2CH_2OCH_3},\ \mathsf{CH_2OCH_2CH_2CH_3},\ \mathsf{CH_2OCH_3},\ \mathsf{CH_2OCH_3},\ \mathsf{CH_2OCH_3},$ $\mathsf{CH_2OCH}(\mathsf{CH_3})_2,\ \mathsf{CH_2OCH_2CF_3},\ \mathsf{CH_2OCH_2CH=CH_2},\ \mathsf{CH_2OCH_2CCH},\ \mathsf{CH_2OCH_2CCH_3},$ CH2OCH2CH2CCH, CH2OCH2CN, CH2OCH2C2CN, CH2OCH2CH2CH2CH2OCH3, $\mathsf{CH_2OCH_2CH_2OCH_2CH_2OCH_3},\ \mathsf{CH_2OCH_2CH_2CH_2OCF_3},\ \mathsf{CH_2CH_2OCH_3},\ \mathsf{CH_2CH_2OCH_3},$ CH₂CH₂CH₂OCH₃, CH₂CH₂CH₂OCH₂CH₃ or CH₂CH₂OCH₂CH₂OCH₃, more especially CH₃, CH₂CH₂CH₂OCH₃ or CH₂OCH₂CH₂OCH₃, especially prominent compounds being those wherein Y is methylene, ethylene or oxygen, A₁ is CR₇, A₂ is CR₈ and R₁, R₂, R₆, R₇, R₈ are each independently of the others hydrogen or methyl. Of that group, preference is given to those compounds wherein Q is Q₁, p₁ is 0 and m₁ is 1, the group (Z₁)m₁ is in the orthoposition relative to the carbonyl group, and R₃ is hydroxy.

Special emphasis should also be given to compounds of formula I wherein Q is Q_1 , Z_1 is C₁-C₃alkylene which may be interrupted by oxygen, Z₁ being especially a bidentate group of form $-CH_{2^-}$, $-CH_2CH_{2^-}$, $-OCH_{2^-}$, $-OCH_2CH_{2^-}$, $-CH_2O$ -, $-CH_2CH_2O$ -, $-CH_2OCH_2$ - or -CH₂CH₂CH₂O-, and L₁ is preferably a monocyclic group

wherein R_{26} is hydrogen or methyl, R_{27} is hydrogen, C_1 - C_3 alkyl, C_1 - C_3 alkoxy, C_1 - C_3 alkylthio or trifluoromethyl and X_4 is oxygen or sulfur.

Where no free valency is indicated in those preferred definitions of L_1 , for example as in CH, the linkage site is located at the carbon atom labelled "CH" or in the case of

at the carbon atom labelled "CH₂" or in a case such as, for example, at the bonding site indicated at the bottom left.

In a further preferred group of compounds of formula I, X_1 , X_2 and X_3 are C_1 - C_3 haloalkyl, especially CF_3 , CF_2CF_3 , CF_2CI or CF_2H , more especially CF_3 or CF_2H .

An especially preferred group of compounds of formula I comprises those compounds wherein

Y is oxygen, $C(=CR_{6a}R_{6b})$ or a C_1 - C_4 alkylene chain which may be mono- or poly-substituted by R_6 ;

A₁ is CR₇;

A2 is CR8;

 R_1 , R_2 , R_6 , R_{6a} , R_{6b} , R_7 and R_8 are each independently of the others hydrogen, C_1 - C_6 alkyl or C_1 - C_6 alkoxycarbonyl;

or two substituents R₆ at the same carbon atom together form a C₂-C₅alkylene chain;

R₃ is hydroxy;

Q is the radical Q1;

 p_1 is 0;

m₁ is 1;

X₁ is C₁-C₆haloalkyl;

 Z_1 is a C_1 - C_6 alkyl group which is interrupted by oxygen and is mono- or poly-substituted by L_1 ; it also being possible for L_1 to be bonded at the terminal carbon atom of the C_1 - C_6 alkyl group;

or Z₁ is C₁-C₆alkyl;

and L₁ is C₁-C₆alkoxy;

and agronomically acceptable salts/isomers/enantiomers/tautomers of those compounds.

The compounds of formula I can be prepared by means of processes known *per se*, e.g. as described in WO/0039094, as indicated below with reference to the examples of compounds of formula Ia

$$(Z_1)m_1$$
 $(O)p_1$
 A_2
 (Ia)

wherein R_1 , R_2 , A_1 , A_2 , Y, X_1 , Z_1 , m_1 and p_1 are as defined above.

In a preferred process, for example in the case of compounds of formula la

wherein R_1 , R_2 , A_1 , A_2 and Y are as defined above and Q is a group Q_1 , a) a compound of formula Q₁a

$$(Z_1)m_1$$
 X_1
 $(Q_1a)_1$
 $(Q_1a)_2$

wherein Z_1 , m_1 , X_1 and p_1 are as defined above and E_1 is a leaving group, for example halogen or cyano, is reacted in an inert organic solvent, in the presence of a base, with a compound of formula Da

wherein Y, R₁, R₂, A₂ and A₁ are as defined for formula I, to form compound(s) of formula IIa and/or IIb

$$(Z_1)m_1 \qquad (Z_1)m_1 \qquad (Z_1)m_1$$

and the latter is(are) then isomerised, for example in the presence of a base and a catalytic amount of an acylating agent, for example dimethylaminopyridine (DMAP), or a cyanide source, e.g. acetone cyanohydrin, potassium cyanide or trimethylsilyl cyanide;

b) a compound of formula Q₁b

or

$$(Z_1)m_1$$
 OH X_1 N $(O)p_1$ $(Q_1b),$

wherein Z_1 , m_1 , p_1 and X_1 are as defined for formula I, is reacted with a compound of formula Da

$$R_2$$
 A_2
 A_1
 A_1
 A_2
 A_3
 A_4
 A_4
 A_4
 A_5
 A_4
 A_5
 A_5

wherein Y, R_1 , R_2 , A_1 and A_2 are as defined for formula I, in an inert organic solvent, in the presence of a base and a coupling reagent, to form compound(s) of formula IIa and/or IIb

$$(Z_1)m_1 \qquad (Z_1)m_1 \qquad (Z_1)m_1$$

and the latter is(are) then isomerised, for example as described under Route a).

The intermediates of formulae Da, IIa and IIb are novel and have been developed especially for the preparation of the compounds of formula I. The present invention therefore relates also thereto. The novel intermediates of formulae Da, IIa, IIb correspond, in summary, to the general formulae IIIa and IIIb

$$R_2$$
 A_2
 A_1
 R_1
 R_{29} (IIIa) and R_2
 A_1
 R_1
 R_1
 R_2
 R_2
 R_2
 R_2
 R_3
 R_4
 R_1

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wherein R_1 , R_2 , Y, A_1 and A_2 are as defined above and R_{29} is OH or OC(O)Q wherein Q is as defined for formula I.

The preparation of the compounds of formula I is illustrated in greater detail in the following Reaction Schemes.

Reaction Scheme 1

Route a):
$$\begin{array}{c} \text{solvent e.g. } \text{CH}_2\text{Cl}_2 \\ \text{or } \text{CH}_3\text{CN} \\ \text{base e.g. } (\text{C}_2\text{H}_5)_3\text{N}, & (Z_1)\text{m}_1 \\ \text{(O)p}_1 & (\text{IIa}) \end{array}$$

According to Reaction Scheme 1 it is preferable to prepare the compounds of formula I having the group Q_1 , Q_2 and Q_3 wherein R_3 is hydroxy and p_1 , p_2 and p_3 are 0.

Compounds of formula I wherein p_1 , p_2 and p_3 are 1, that is to say the corresponding N-oxides of formula I, can be prepared by reacting a compound of formula I wherein p_1 , p_2 and p_3 are 0 with a suitable oxidising agent, for example with the H_2O_2 -urea adduct in the

presence of an acid anhydride, e.g. trifluoroacetic anhydride. Such oxidations are known in the literature, for example from *J. Med. Chem.*, 32 (12), 2561-73, 1989 or WO 00/15615.

For the preparation of the compounds of formula I wherein Q is the groups Q_1 , Q_2 and Q_3 and R_3 is hydroxy, for example in accordance with Reaction Scheme 1, Route a), the carboxylic acid derivatives of formula Q_1 a wherein E_1 is a leaving group, e.g. halogen, for example iodine, bromine and especially chlorine, N-oxyphthalimide or N,O-dimethylhydroxylamino, or part of an activated ester, e.g. $\bigcap_{N \to R} \bigcap_{N \to R} \bigcap$

diimide (DCC) and the corresponding carboxylic acid) or ربابا ۱۱ (۲۵ طانعه دانی) (formed from N-

ethyl-N'-(3-dimethylaminopropyl)-carbodiimide (EDC) and the corresponding carboxylic acid) are used as starting materials. They are reacted in an inert, organic solvent, e.g. a halogenated hydrocarbon, for example dichloromethane, a nitrile, for example acetonitrile, or an aromatic hydrocarbon, for example toluene, and in the presence of a base, e.g. an alkylamine, for example triethylamine, an aromatic amine, for example pyridine or 4-dimethylaminopyridine (DMAP), with the dione derivatives of formula Da to form the isomeric enol esters of formula IIa or IIb. That esterification can be carried out at temperatures of from 0°C to 110°C.

The isomerisation of the enol ester derivatives of formulae IIa and IIb to form the derivatives of formula I wherein R_3 is hydroxy can be carried out, for example, analogously to EP-A-0 353 187, EP-A-0 316 491 or WO 97/46530 in the presence of a base. e.g. an alkylamine, for example triethylamine, a carbonate, for example potassium carbonate, and a catalytic amount of DMAP or a catalytic amount of a cyanide source, for example acetone cyanohydrin, potassium cyanide or trimethylsilyl cyanide. The two reaction steps can be carried out in situ, especially when a cyanide compound of formula Q_1 a (E_1 = cyano) is used, or in the presence of a catalytic amount of acetone cyanohydrin or potassium cyanide, without isolation of the intermediates IIa and IIb.

According to Reaction Scheme 1, Route b), the desired derivatives of formula I wherein R₃ is hydroxy can be obtained e.g. analogously to E. Haslem, *Tetrahedron*, 2409-2433, 36, 1980 by first preparing enol esters of formula IIa and/or IIb by means of esterification of the carboxylic acids of formula Q₁b with the dione derivatives of formula Da in an inert solvent, for example a halogenated hydrocarbon, for example dichloromethane, a nitrile, for example acetonitrile, or an aromatic hydrocarbon, for example toluene, in the presence of a base, e.g.

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an alkylamine, for example triethylamine, and a coupling agent, for example 2-chloro-1-methyl-pyridinium iodide, which enol esters are then converted *in situ* or in a second step into the compounds of formula I. That reaction takes place, depending upon the solvent used, at temperatures of from 0°C to 110°C and yields first, as described under Route a), the isomeric esters of formulae IIa and IIb, which can be isomerised to the desired derivatives of formula I (R₃ = hydroxy) as described under Route a), for example in the presence of a base and a catalytic amount of DMAP, or a cyanide source, e.g. acetone cyanohydrin.

The activated carboxylic acid derivatives of formula Q_1a in Reaction Scheme 1 (Route a) wherein E_1 is a leaving group, e.g. halogen, for example bromine, iodine or especially chlorine, can be prepared according to known standard methods, as described e.g. in C. Ferri "Reaktionen der organischen Synthese", Georg Thieme Verlag, Stuttgart, 1978, page 460 ff.. Such reactions are generally known and various variations in respect of the leaving group E_1 are described in the literature.

Compounds of formula I wherein R₃ is other than hydroxy or halogen can be prepared in accordance with conversion reactions generally known from the literature by nucleophilic substitution reactions on chlorides of formula I wherein R₃ is chlorine, which are readily obtainable from compounds of formula I wherein R₃ is hydroxy, likewise in accordance with known processes, by reaction with a chlorinating agent, such as phosgene, thionyl chloride or oxalyl chloride. In such a reaction there are used, for example, mercaptans, thiophenols or heterocyclic thiols in the presence of a base, for example 5-ethyl-2-methylpyridine, diisopropyl-ethylamine, triethylamine, sodium hydrogen carbonate, sodium acetate or potassium carbonate.

Compounds of formula I wherein the substituent R_3 contains thio groups can be oxidised to the corresponding sulfones and sulfoxides of formula I analogously to known standard methods, e.g. with peracids, for example meta-chloroperbenzoic acid (m-CPBA) or peracetic acid. In that reaction the degree of oxidation at the sulfur atom (SO- or SO_2 -) can be controlled by the amount of oxidising agent. Other sulfur-containing groups, for example those in the meanings of R_1 , R_2 , R_6 , R_7 , R_8 , L_1 , L_1 , L_2 , L_3 , L_4 , L_5 , L_5 , L_7 , L_8

The derivatives of formula I so obtained wherein R_3 is other than hydroxy can also be in various isomeric forms, which can optionally be isolated in pure form. The invention therefore includes all those stereoisomeric forms. Examples of those isomeric forms are the following formulae I', I" and I", as shown with reference to compounds of formula I wherein Q is group Q_1 .

$$(Z_{1})m_{1} \longrightarrow (Z_{1})m_{1} \longrightarrow (Z_{$$

The compounds of formula Da used as starting materials can be prepared, for example, by treating a compound of formula Db

wherein A_1 , A_2 , R_1 , R_2 and Y are as defined for formula I, Xa is chlorine or bromine and R_3 is hydroxy or C_1 - C_6 alkoxy, in the presence of a suitable reducing agent, e.g. tributyltin hydride, or zinc in acetic acid, optionally followed, when R_3 is C_1 - C_6 alkoxy, by aftertreatment in the presence of a hydrolysing agent, e.g. dilute hydrochloric acid or aqueous p-toluenesulfonic acid.

Specifically the compounds of formula Db above wherein R_1 and R_2 are each hydrogen or methyl, A_1 and A_2 are each methylene, Y is oxygen, methylene or ethylene, R_3 is chlorine, bromine or hydroxy and Xa is chlorine or bromine are known from Organic Letters 2002, 4, 1997; Archiv der Pharmazie 1987, 320, 1138; J. Amer. Chem. Soc. 1968, 90 2376 and from US-A-3 538 117 and can be prepared in accordance with the methods described therein.

The compounds of formula Da used as starting materials can accordingly also be prepared very generally in accordance with those known methods, by reacting a dienophilic compound of formula IV

wherein A₁, A₂, R₁, R₂ and Y are as defined above, in an inert solvent, such as dichloromethane, 1,2-dichloroethane, toluene or chlorobenzene, optionally at elevated temperature or under elevated pressure, in a reaction similar to a Diels-Alder reaction, with a tetrahalocyclopropene of formula V

wherein Xa is chlorine or bromine, and then hydrolysing the resulting bicyclic compound of formula VI

wherein A₁, A₂, R₁, R₂, Xa and Y are as defined above, optionally in the presence of a suitable catalyst, for example silver nitrate or the silver tetrafluoroborate salt, or an acid, such as 90-98% sulfuric acid, 90% trifluoroacetic acid or p-toluenesulfonic acid, or reacting it with an alcoholate, for example sodium methanolate, potassium ethanolate or lithium isopropanolate, in order thus to obtain a compound of formula Db

$$R_2$$
 A_2
 A_1
 A_1
 A_1
 A_2
 A_3
 A_4
 A_1
 A_1
 A_2
 A_3
 A_4
 A_4
 A_5
 A_5

wherein A_1 , A_2 , R_1 , R_2 , X_3 and Y_4 are as defined above, and R_3 depending upon the reaction conditions is either hydroxy, C_1 - C_6 alkoxy, chlorine or bromine, which is then further reduced and/or hydrolysed to form a novel compound of formula Da

$$R_2$$
 A_2
 A_1
 R_1
 O
 O
 O

wherein A₁, A₂, R₁, R₂ and Y are as defined above.

Compounds of formula VI can thus be reacted further, for example in the presence of 90-98% sulfuric acid at elevated temperature of about 80-100°C, to form compounds of formula Db wherein R₃ is hydroxy and Xa is chlorine or bromine, as described in greater detail in J. Amer. Chem. Soc. 1968, 90, 2376.

It is also possible for compounds of formula VI to be converted into compounds of formula Db wherein R₃ and Xa are both chlorine or bromine, for example in the presence of 90% trifluoroacetic acid at boiling temperature or in the presence of aqueous silver nitrate at ambient temperature, as described in Archiv der Pharmazie 1987, 320, 1138 and in Organic Letters 2002, 4, 1997.

On the other hand, compounds of formula VI can be converted into compounds of formula Db wherein R_3 is C_1 - C_6 alkoxy and Xa is chlorine or bromine in good yields at ambient temperature in the presence of alcoholates of formula $R_{3a}O^-M^+$ wherein R_{3a} is accordingly C_1 - C_6 alkyl and M^+ is an alkali metal salt, in a solvent, such as an alcohol $R_{3a}OH$, toluene or ether, e.g. tetrahydrofuran, dimethoxyethane.

It is also possible for compounds of formula Db wherein Xa is chlorine or bromine and R_3 is hydroxy or C₁-C₆alkoxy to be reduced in the presence of reducing agents, e.g. tributyltin hydride, in an organic solvent, such as toluene or tetrahydrofuran, to form compounds of formula Db wherein Xa is hydrogen, as is well known according to general methods from the literature for the reduction of a halogen in a position adjacent to a carbonyl group (see e.g. Comprehensive Org. Funct. Group. Transformations, Vol. 1. ed. S.M. Roberts, Pergamon Press Oxford, 1995, pages 1-11).

Finally, compounds of formula Db wherein R₃ is C₁-C₆alkoxy, chlorine or bromine and Xa is hydrogen can be hydrolysed to compounds of formula Da in the presence of acids, e.g. dilute hydrochloric acid, dilute sulfuric acid or p-toluenesulfonic acid.

The general reaction sequences for the preparation of compounds of formulae Da and Db from compounds of formulae IV and V via intermediates of formula VI are shown in the following Scheme.

In the reaction of compounds of formula VI and/or Db wherein A1, A2, R1, R2, Xa and Y are as defined above and R_3 is C_1 - C_6 alkoxy with alcoholates of formula $R_{3a}O^{\text{-}}M^{\text{+}}$, it is also possible for compounds of formula VII to be formed

wherein A_1 , A_2 , R_1 , R_2 , X_3 and Y_4 are as defined above and R_{3a} is C_1 - C_6 alkyl or, when glycol is used, two R_{3a} together are $-CH_2CH_2$ -. Those compounds too can be reacted under the reduction conditions mentioned above, for example with tributyltin hydride or with zinc in the presence of acetic acid, by way of a compound of formula VIIa

$$R_3$$
a R_3 a

wherein A_1 , A_2 , R_1 , R_2 , R_{3a} and Y are as defined above, and subsequent hydrolysis, for example with dilute hydrochloric acid or a catalytic amount of p-toluenesulfonic acid in water, to form the compounds of formulae Da and Db

wherein A_1 , A_2 , R_1 , R_2 and Y are as defined above and R_3 is hydroxy and Xa is hydrogen, as is shown generally in the following Scheme.

In a further process, compounds of formula Da can also be prepared either by conversion of a compound of formula VIII

$$R_2$$
 A_2
 A_1
 R_1
 R_1
 O
 R_2
 O
 R_3
 O
 R_4
 O
 R_4
 O
 R_5
 O
 R_7
 O
 R_8

wherein R_1 , R_2 , A_1 , A_2 , Y are as defined above and Ra is C_1 - C_6 alkyl or, when glycol is used, two R_{3a} together are $-CH_2CH_2$ -, by hydrolysis, e.g. by treatment with an aqueous acid, Route c),

or by conversion of a compound of formula IX

$$R_2$$
 A_2
 A_1
 R_1
 R_1
 R_1

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wherein R_1 , R_2 , A_1 , A_2 , Y are as defined above, by means of oxidation, e.g. with selenium dioxide, Route d), first into a diketo compound of formula X

$$R_2$$
 A_2
 A_1
 A_1
 A_1
 A_1
 A_1

wherein R_1 , R_2 , A_1 , A_2 , Y are as defined above, and subsequent conversion of that compound by carbene insertion, e.g. with diazomethane or with trimethylsilyl-diazomethane, into the 1,3-dione compound Da.

Those processes are also known *per se* to the person skilled in the art; the compounds can be prepared, depending upon the functionality of the groups R_1 , R_2 , A_1 , A_2 and Y, by general reaction routes shown in the following Scheme:

Using such routes it is readily possible to obtain, in particular, those compounds of formula VIII wherein Y is a C_2 alkylene chain substituted by R_6 , wherein R_6 is for example alkoxy, benzyloxy, alkylcarbonyl, alkoxycarbonyl, alkylthio or alkylsulfonyl.

Methods of obtaining the starting compounds of formula VIII used in the above-mentioned process are known, for example, from Acc. Chem. Res. 2002, 856; J.O.C. 2002, 67, 6493; Organic Letters 2002, 2477; Synlett, 2002, 1520; Chem. Commun. 2001, 1624; Synlett,

2000, 421; Tetrahedron Letters, 1999, 8431; J.O.C. 1999, *64*, 4102; J.A.C.S. 1998, *129*, 13254; Tetrahedron Letters, 1998, 659; Synlett, 1997, 1351. Methods of obtaining the starting compounds of formula IX are described, for example, in Org. Lettr. 2002, 2063; Synthetic Commun. 2001, 707; J.A.C.S. 2001, *123*, 1569; Synlett, 1999, 225; Synlett, 1997, 786; Tetrahedron Letters, 1996, 7295; Synthesis, 1995, 845. Compounds of formula X are known, for example, from Synthesis, 2000, 850.

The transformations according to Route d) are likewise known, for example from Tetr. 1986, 42, 3491. Oxidation is preferably carried out with selenium dioxide in a solvent, such as acetic acid, at temperatures of from about 20°C to about 120°C and the carbene insertion with diazomethane is preferably effected at from about -40°C to about 50°C in a solvent, such as dichloromethane or diethyl ether. The carbene insertion can also be carried out with trimethylsilyldiazomethane, it having proved advantageous to work in the presence of a Lewis acid catalyst, such as boron trifluoride etherate, for example at temperatures of from about -15°C to about +25°C.

In principle, however, the compounds of formulae Da, Db, VII, VIIa, VIII, IX and X used as starting materials and as intermediates can be prepared, in dependence upon the substituent pattern A_1 , A_2 , R_1 , R_2 and Y and also in dependence upon the availability of the starting materials, according to any desired methods and reaction routes, there being no limitation in respect of the process variants indicated above.

The compounds of formula Da wherein R₁, R₂, A₁, A₂ and Y are as defined above, and also compounds of formula Db wherein R₁, R₂, A₁, A₂ and Y are as defined above and R₃ is chlorine, bromine, hydroxy or C₁-C₆alkoxy and Xa is hydrogen, chlorine or bromine, with the exception of the compounds 3-chloro-8-oxa-bicyclo[3.2.1]oct-6-ene-2,4-dione; 3-chloro-bicyclo[3.2.1]oct-6-ene-2,4-dione; 3-chloro-4-hydroxy-bicyclo[3.2.1]octa-3,6-dien-2-one; 3,4-dibromo-1,5-dimethyl-8-oxa-bicyclo-[3.2.1]octa-3,6-dien-2-one; 3,4-dibromo-1,5-dimethyl-8-oxa-bicyclo-[3.2.1]octa-3,6-dien-2-one; 3,4-dibromo-bicyclo[3.2.1]octa-3,6-dien-2-one; 3,4-dichloro-8-oxa-bicyclo[3.2.1]octa-3,6-dien-2-one; 3,4-dichloro-bicyclo[3.2.1]octa-3,6-dien-2-one and 7,8-dibromo-5,9-dihydro-5,9-methano-benzocyclohepten-6-one, and also the compounds of formula VII are novel and constitute valuable intermediates for the preparation of compounds of formula I. The present invention accordingly relates likewise thereto.

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The compounds of formulae Q_{1a} , Q_{2a} and Q_{3a} used as starting materials and their corresponding acids Q_{1b} , Q_{2b} and Q_{3b} are known from the publications WO 00/15615 and WO 01/94339 or can be prepared in accordance with the methods described therein.

The compounds of formula V used as starting material are likewise known, for example from Synthesis 1987, 260 and from J. Amer. Chem. Soc. 1968, 90 2376.

A large number of known standard methods are available for the preparation of all further compounds of formula I functionalised in accordance with the definition of A_1 , A_2 , R_1 , R_2 , Y and Q, for example alkylation, halogenation, acylation, amidation, oximation, oxidation and reduction, the choice of a suitable preparation process being governed by the properties (reactivities) of the substituents in question in the respective intermediates of formulae I, D_3 , D_5 , V_1 , V_1 and V_2 , and especially the starting materials of formulae IV and V_3 and V_4 , V_4 and V_5 , V_6 and V_7 , V_8 , V_9

The reactions to form compounds of formula I are advantageously carried out in aprotic, inert organic solvents. Such solvents are hydrocarbons, such as benzene, toluene, xylene or cyclohexane, chlorinated hydrocarbons, such as dichloromethane, trichloromethane, tetrachloromethane or chlorobenzene, ethers, such as diethyl ether, ethylene glycol dimethyl ether, diethylene glycol dimethyl ether, tetrahydrofuran or dioxane, nitriles, such as acetonitrile or propionitrile, amides, such as N,N-dimethylformamide, diethylformamide or Nmethylpyrrolidinone. The reaction temperatures are preferably from -20°C to +120°C. The reactions generally proceed slightly exothermically and can generally be carried out at room temperature. In order to shorten the reaction time or to initiate the reaction, brief heating, up to the boiling point of the reaction mixture, can be carried out. The reaction times can likewise be shortened by the addition of a few drops of base as reaction catalyst. Suitable bases are especially tertiary amines, such as trimethylamine, triethylamine, quinuclidine, 1,4diazabicyclo[2.2.2]octane, 1,5-diazabicyclo[4.3.0]non-5-ene or 1,5-diazabicyclo[5.4.0]undec-7-ene. It is also possible, however, to use as bases inorganic bases, such as hydrides, e.g. sodium or calcium hydride, hydroxides, e.g. sodium or potassium hydroxide, carbonates, e.g. sodium or potassium carbonate, or hydrogen carbonates, e.g. potassium or sodium hydrogen carbonate. The bases can be used as such or alternatively with catalytic amounts of a phase transfer catalyst, e.g. crown ethers, especially 18-crown-6, or tetraalkylammonium salts.

The end products of formula I can be isolated in conventional manner by concentration or

evaporation of the solvent and purified by recrystallisation or trituration of the solid residue in solvents in which they are not readily soluble, such as ethers, aromatic hydrocarbons or chlorinated hydrocarbons, by distillation or by means of column chromatography or by means of the HPLC technique using a suitable eluant.

The sequence in which the reactions should be carried out in order as far as possible to avoid secondary reactions will be familiar to the person skilled in the art. Unless the synthesis is specifically aimed at the isolation of pure isomers, the product may be obtained in the form of a mixture of two or more isomers, for example chiral centres in the case of alkyl groups or cis/trans isomerism in the case of alkenyl groups or <E> or <Z> forms. All such isomers can be separated by methods known *per se*, for example chromatography, crystallisation, or produced in the desired form by means of a specific reaction procedure.

For the use according to the invention of the compounds of formula I, or of compositions comprising them, there come into consideration all methods of application customary in agriculture, for example pre-emergence application, post-emergence application and seed dressing, and also various methods and techniques such as, for example, the controlled release of active ingredient. For that purpose a solution of the active ingredient is applied to mineral granule carriers or polymerised granules (urea/formaldehyde) and dried. If required, it is additionally possible to apply a coating (coated granules), which allows the active ingredient to be released in metered amounts over a specific period of time.

The invention therefore relates also to a herbicidal and plant-growth-inhibiting composition comprising a herbicidally effective amount of a compound of formula I according to claim 1 on an inert carrier.

The compounds of formula I can be used as herbicides in unmodified form, that is to say as obtained in the synthesis, but they are preferably formulated in customary manner together with the adjuvants conventionally employed in formulation technology e.g. into emulsifiable concentrates, directly sprayable or dilutable solutions, dilute emulsions, suspensions, mixtures of a suspension and an emulsion (suspoemulsions), wettable powders, soluble powders, dusts, granules or microcapsules. Such formulations are described, for example, on pages 9 to 13 of WO 97/34485. As with the nature of the compositions, the methods of application, such as spraying, atomising, dusting, wetting, scattering or pouring, are selected in accordance with the intended objectives and the prevailing circumstances.

The formulations, that is to say the compositions, preparations or mixtures comprising the compound (active ingredient) of formula I or at least one compound of formula I and, usually, one or more solid or liquid formulation adjuvants, are prepared in known manner, e.g. by homogeneously mixing and/or grinding the active ingredients with the formulation adjuvants, for example solvents or solid carriers. Surface-active compounds (surfactants) may also be used in addition in the preparation of the formulations. Examples of solvents and solid carriers are given, for example, on page 6 of WO 97/34485.

Depending upon the nature of the compound of formula I to be formulated, suitable surfaceactive compounds are non-ionic, cationic and/or anionic surfactants and surfactant mixtures having good emulsifying, dispersing and wetting properties.

Examples of suitable anionic, non-ionic and cationic surfactants are listed, for example, on pages 7 and 8 of WO 97/34485.

In addition, the surfactants conventionally employed in formulation technology, which are described, *inter alia*, in "McCutcheon's Detergents and Emulsifiers Annual" MC Publishing Corp., Ridgewood New Jersey, 1981, Stache, H., "Tensid-Taschenbuch", Carl Hanser Verlag, Munich/Vienna 1981, and M. and J. Ash, "Encyclopedia of Surfactants", Vol. I-III, Chemical Publishing Co., New York, 1980-81, are also suitable for the preparation of the herbicidal compositions according to the invention.

The compositions according to the invention can additionally include an additive comprising an oil of vegetable or animal origin, a mineral oil, alkyl esters thereof or mixtures of such oils and oil derivatives.

The amount of oil additive in the composition according to the invention is generally from 0.01 to 2 %, based on the spray mixture. For example, the oil additive can be added to the spray tank in the desired concentration after the spray mixture has been prepared.

Preferred oil additives comprise mineral oils or an oil of vegetable origin, for example rapeseed oil, olive oil or sunflower oil, emulsified vegetable oil, such as AMIGO® obtainable from Rhône-Poulenc Canada Inc., alkyl esters of oils of vegetable origin, for example the methyl derivatives, or an oil of animal origin, such as fish oil or beef tallow. A preferred additive contains as active components essentially 80 % by weight alkyl esters of fish oils

and 15 % by weight methylated rapeseed oil, and also 5 % by weight of customary emulsifiers and pH modifiers.

Especially preferred oil additives comprise alkyl esters of higher fatty acids (C₈-C₂₂), especially the methyl derivatives of C₁₂-C₁₈ fatty acids, for example the methyl esters of lauric acid, palmitic acid and oleic acid. Those esters are known as methyl laurate (CAS-111-82-0), methyl palmitate (CAS-112-39-0) and methyl oleate (CAS-112-62-9). A preferred fatty acid methyl ester derivative is Emery® 2230 and 2231 (Henkel subsidiary Cognis GMBH, DE).

The application and action of the oil additives can be improved by combining them with surface-active substances, such as non-ionic, anionic or cationic surfactants. Examples of suitable anionic, non-ionic and cationic surfactants are listed on pages 7 and 8 of WO 97/34485.

Preferred surface-active substances are anionic surfactants of the dodecylbenzylsulfonate type, especially the calcium salts thereof, and also non-ionic surfactants of the fatty alcohol ethoxylate type. Special preference is given to ethoxylated C₁₂-C₂₂ fatty alcohols having a degree of ethoxylation of from 5 to 40. Examples of commercially available, preferred surfactants are the Genapol types (Clariant AG, Muttenz, Switzerland). Also preferred for use as surface-active substances are silicone surfactants, especially polyalkyl-oxide-modified heptamethyltrisiloxanes, such as are commercially available as e.g. Silwet L-77®, and also perfluorinated surfactants. The concentration of surface-active substances in relation to the total additive is generally from 1 to 30 % by weight.

Examples of oil additives that consist of mixtures of oils or mineral oils or derivatives thereof with surfactants are Edenor ME SU®, Turbocharge® (Zeneca Agro, Stoney Creek, Ontario, CA) and Actipron® (BP Oil UK Limited, GB).

The addition of an organic solvent to the oil additive/surfactant mixture can also bring about a further enhancement of action. Suitable solvents are, for example, Solvesso® (ESSO) and Aromatic Solvent® (Exxon Corporation) types.

The concentration of such solvents can be from 10 to 80 % by weight of the total weight.

Such oil additives, which are also described, for example, in US-A-4 834 908, are suitable for the composition according to the invention. A commercially available oil additive is known by the name MERGE®, is obtainable from the BASF Corporation and is essentially described,

for example, in US-A-4 834 908 in col. 5, as Example COC-1. A further oil additive that is preferred according to the invention is SCORE® (Novartis Crop Protection Canada.)

In addition to the oil additives listed above, in order to enhance the action of the compositions according to the invention it is also possible for formulations of alkyl pyrrolidones, such as are commercially available e.g. as Agrimax®, to be added to the spray mixture. Formulations of synthetic latices, such as, for example, polyacrylamide, polyvinyl compounds or poly-1-p-menthene, such as are commercially available as e.g. Bond®, Courier® or Emerald®, can also be used to enhance action. Solutions that contain propionic acid, for example Eurogkem Pen-e-trate®, can also be added as action-enhancing agent to the spray mixture.

The herbicidal formulations generally contain from 0.1 to 99 % by weight, especially from 0.1 to 95 % by weight, of herbicide, from 1 to 99.9 % by weight, especially from 5 to 99.8 % by weight, of a solid or liquid formulation adjuvant, and from 0 to 25 % by weight, especially from 0.1 to 25 % by weight, of a surfactant. Whereas commercial products will preferably be formulated as concentrates, the end user will normally employ dilute formulations. The compositions may also comprise further ingredients, such as stabilisers, for example vegetable oils or epoxidised vegetable oils (epoxidised coconut oil, rapeseed oil or soybean oil), anti-foams, for example silicone oil, preservatives, viscosity regulators, binders, tackifiers, and also fertilisers or other active ingredients.

The compounds of formula I are generally applied to the plant or to the locus thereof at rates of application of from 0.001 to 4 kg/ha, especially from 0.005 to 2 kg/ha. The concentration required to achieve the desired effect can be determined by experiment. It is dependent upon the nature of the action, the stage of development of the cultivated plant and of the weed and on the application (place, time, method) and may vary within wide limits as a function of those parameters.

The compounds of formula I are distinguished by herbicidal and growth-inhibiting properties, allowing them to be used in crops of useful plants, especially cereals, cotton, soybeans, sugar beet, sugar cane, plantation crops, rape, maize and rice, and also for non-selective weed control. The term "crops" is to be understood as including also crops that have been rendered tolerant to herbicides or classes of herbicides (such as, for example, HPPD inhibitors, ALS inhibitors, EPSPS (5-enol-pyrovyl-shikimate-3-phosphate-synthase) inhibitors, GS (glutamine synthetase) inhibitors) as a result of conventional methods of

breeding or genetic engineering. An example of a crop that has been rendered tolerant to imidazolinones, e.g. imazamox, by conventional methods of breeding (mutagenesis) is Clearfield® summer rape (Canola). Examples of crops that have been rendered tolerant to herbicides or classes of herbicides by genetic engineering methods include glyphosate- and glufosinate-resistant maize varieties commercially available under the trade names RoundupReady® and LibertyLink®.

Crops are also to be understood as being those which have been rendered resistant to harmful insects by genetic engineering methods, for example Bt maize (resistant to European corn borer), Bt cotton (resistant to cotton boll weevil) and also Bt potatoes (resistant to the Colorado beetle). Examples of Bt maize are the Bt 176 maize hybrids of NK® (Syngenta Seeds). The Bt toxin is a protein that is formed naturally by *Bacillus thuringiensis* soil bacteria. Examples of toxins, or transgenic plants able to synthesise such toxins, are described in EP-A-0 451 878, EP-A-0 374 753, WO 93/07278, WO 95/34656 and EP-A-0 427 529.

Plant crops or seed material thereof can be both herbicide-tolerant and at the same time resistant to insect feeding ("stacked" transgenic events).

The weeds to be controlled may be both monocotyledonous and dicotyledonous weeds, such as, for example, Stellaria, Nasturtium, Agrostis, Digitaria, Avena, Setaria, Sinapis, Lolium, Solanum, Echinochloa, Scirpus, Monochoria, Sagittaria, Bromus, Alopecurus, Sorghum halepense, Rottboellia, Cyperus, Abutilon, Sida, Xanthium, Amaranthus, Chenopodium, Ipomoea, Chrysanthemum, Galium, Viola and Veronica.

The compositions according to the invention may additionally comprise growth regulators, for example trinexapac (744), chlormequat chloride (129), clofencet (148), cyclanilide (170), ethephon (281), flurprimidol (355), gibberellic acid (379), inabenfide (421), maleic hydrazide (449), mefluidide (463), mepiquat chloride (465), paclobutrazol (548), prohexadione-calcium (595), uniconazole (746) or thidiazuron (703). It is also possible for a composition according to the invention to comprise fungicides, for example azoxystrobin (43), epoxiconazole (48), benomyl (60), bromuconazole (89), bitertanol (77), carbendazim (107), cyproconazole (189), cyprodinil (190), diclomezine (220), difenoconazole (228), diniconazole (247), epoxiconazole (48), ethirimol (284), etridiazole (294), fenarimol (300), fenbuconazole (302), fenpiclonil (311), fenpropidin (313), fenpropimorph (314), ferimzone (321), fludioxonil (334), fluquinconazole (349), flutolanil (360), flutriafol (361), imazalil (410), ipconazole (426),

iprodione (428), isoprothiolane (432), kasugamycin (438), kresoxim-methyl (439), spiroxamine (441), mepronil (466), myclobutanil (505), nuarimol (528), pefurazoate (554), pencycuron (556), phthalide (576), probenazole (590), prochloraz (591), propiconazole (607), pyrazophos (619), pyroquilone (633), quinoxyfen (638), quintozene (639), tebuconazole (678), tetraconazole (695), thiabendazole (701), thifluzamide (705), triadimeron (720), triadimenol (721), tricyclazole (734), tridemorph (736), triflumizole (738), triforine (742), triticonazole (745) or vinclozolin (751). The number in brackets after each active ingredient refers to the entry number of that active ingredient in the Pesticide Manual, eleventh ed., British Crop Protection Council, 1997.

The following Examples further illustrate the invention but do not limit the invention.

<u>Preparation Example 1: Preparation of 2,3,4,4-tetrachloro-1,5-dimethyl-8-oxa-bicyclo-[3.2.1]octa-2,6-diene:</u>

6.49 g (67.48 mmol) of 2,5-dimethylfuran and 10 g (56.23 mmol) of tetrachlorocyclopropene are heated at boiling temperature in 70 ml of toluene for 16 hours. The toluene and excess 2,5-dimethylfuran are then removed under reduced pressure. The product, 14.77 g (95.9% of theory) of 2,3,4,4-tetrachloro-1,5-dimethyl-8-oxa-bicyclo[3.2.1]octa-2,6-diene, which remains behind in the form of an oil, can be transferred to the next reaction step without further purification (¹H NMR).

¹H NMR (300 MHz; CDCl₃) δ 6.50 (d, 1H); 6.15 (d, 1H); 1.82 (s, 3H); 1.63 (s, 3H).

Preparation Example P2: Preparation of 3,4-dichloro-1,5-dimethyl-8-oxa-bicyclo[3.2,1]octa-3,6-dien-2-one:

14 g (51.1 mmol) of unpurified 2,3,4,4-tetrachloro-1,5-dimethyl-8-oxa-bicyclo[3.2.1]octa-2,6-diene and 17.36 g (102.2 mmol) of silver nitrate are dissolved in 500 ml of acetone/water 1:1

mixture and heated for 15 hours at a temperature of 65-70°C until the reaction of the reactants is complete (thin-layer chromatography (TLC) monitoring (mobile phase hexane / ethyl acetate 4:1)). After the reaction mixture has cooled to ambient temperature, solid sodium hydrogen carbonate is then stirred into the mixture in portions in order to neutralise the nitric acid. The precipitated silver bromide is filtered off and most of the acetone is distilled off under reduced pressure. The aqueous phase that remains behind is extracted three times with ethyl acetate. The organic extract is washed with water, dried over sodium sulfate and concentrated by evaporation. The oily residue is purified by means of silica gel chromatography (eluant gradient: 3-50% ethyl acetate in hexane). 6.1 g (54%) of pure 3,4-dichloro-1,5-dimethyl-8-oxa-bicyclo[3.2.1]octa-3,6-dien-2-one are obtained in the form of a pale yellow solid.

 $^{1}\text{H NMR}$ (300 MHz; CDCl₃) δ 6.65 (d, 1H); 6.23 (d, 1H); 1.72 (s, 3H); 1.61 (s, 3H).

Preparation Example P3: Preparation of 3-chloro-1,5-dimethyl-4-methoxy-8-oxa-bicyclo-[3.2.1]octa-3,6-dien-2-one and 3-chloro-4,4-dimethoxy-1,5-dimethyl-8-oxa-bicyclo[3.2.1]oct-6-en-2-one:

6.0 g (27.39 mmol) of 3,4-dichloro-1,5-dimethyl-8-oxa-bicyclo[3.2.1]octa-3,6-dien-2-one is introduced into 39 ml of anhydrous methanol. At a temperature of 0°C, the reaction mixture is further diluted dropwise with a solution of 15.2 ml of 5.4M sodium methanolate (82.17 mmol) and treated with 10 ml of absolute methanol. The reaction mixture is then heated to ambient temperature with 35 minutes' stirring. Using thin-layer chromatography (hexane/ethyl acetate 8:2) it can be established that reaction of the starting material is complete. The reaction solution is then concentrated under reduced pressure. The residue is then extracted by means of carbon tetrachloride against water. The aqueous phase is extracted a further three times using fresh carbon tetrachloride. The combined organic extracts are dried over sodium sulfate and concentrated by evaporation under reduced pressure; with ice-cooling, the oily product that remains behind crystallises out in the form of a ~1:1 mixture. The mixture is separated by means of column chromatography on silica gel (eluant: gradient from 1-5% ethyl acetate / hexane). 3.1 g (52.9%) of pure 3-chloro-1,5-dimethyl-4-methoxy-8-oxa-bicyclo[3.2.1]octa-3,6-dien-2-one are isolated.

 1 H NMR (300 MHz; CDCl₃) δ 6.48 (d, 1H); 6.24 (d, 1H); 4.24 (s, 3H); 1.60 (s, 3H); 1.56 (s, 3H).

A second fraction yields 3.17 g (46.9%) of pure 3-chloro-4,4-dimethoxy-1,5-dimethyl-8-oxa-bicyclo[3.2.1]oct-6-en-2-one.

 1 H NMR (300 MHz; CDCl₃) δ 6.25 (d, 1H); 6.05 (d, 1H); 5.15 (s, 1H); 3.48 (s, 3H); 3.46 (s, 3H); 1.53 (s, 3H); 1.51 (s, 3H).

<u>Preparation Example P4: Preparation of 4,4-dimethoxy-1,5-dimethyl-8-oxa-bicyclo[3.2.1]oct-6-en-2-one:</u>

2.2 g (8.92 mmol) of 3-chloro-4,4-dimethoxy-1,5-dimethyl-8-oxa-bicyclo[3.2.1]oct-6-en-2-one in 240 ml of toluene are degassed, with heating at reflux temperature, and a catalytic amount of 66 mg of azaisobutyronitrile (AIBN) and a solution of 5.9 ml (22.3 mmol) of tributyltin hydride are added in succession. The reaction mixture is maintained at reflux temperature for a further 20 minutes to complete the reaction (TLC monitoring: hexane/ethyl acetate 4:1). The reaction mixture is then concentrated by evaporation under reduced pressure. The residue is then taken up in acetonitrile and the tin-containing residues are extracted by means of hexane. The acetonitrile phase is concentrated by evaporation *in vacuo*, 1.56 g (82.4% of theory) of 4,4-dimethoxy-1,5-dimethyl-8-oxa-bicyclo[3.2.1]oct-6-en-2-one remaining behind in the form of a yellow oil, which can be used for the next reaction step without further purification.

 1 H NMR (300 MHz; CDCl₃) δ 6.22 (d, 1H); 5.90 (d, 1H); 3.41 (s, 3H); 3.25 (s, 3H); 2.92 and 2.84 (AB syst., 2H, J = 16.5 Hz); 1.55 (s, 3H); 1.45 (s, 3H).

Preparation Example P5: Preparation of 1,5-dimethyl-8-oxa-bicyclo[3.2.1]oct-6-ene-2,4-dione:

1.61 g (7.59 mmol) of 4,4-dimethoxy-1,5-dimethyl-8-oxa-bicyclo[3.2.1]oct-6-en-2-one and 0.432 g (2.28 mmol) of p-toluenesulfonic acid are dissolved in a 2:1 mixture of acetone and water and heated for 50 minutes at a temperature of 70°C (TLC monitoring: hexane/ethyl acetate 9:1). The acetone is then removed under reduced pressure. The aqueous phase is then adjusted to pH 9 with saturated sodium hydrogen carbonate solution and extracted three times with ethyl acetate to remove neutral components. The aqueous phase is then adjusted to pH 5 with dilute hydrochloric acid and extracted three times with fresh ethyl acetate. The organic phase is dried over sodium sulfate and concentrated by evaporation under reduced pressure, there being obtained 1.04 g (82.5%) of technically pure 1,5-dimethyl-8-oxa-bicyclo[3.2.1]oct-6-ene-2,4-dione in the form of a yellowish product, which can be used without further purification in the next reaction step to form compounds of formula I.

 1 H NMR (300 MHz; CDCl₃) δ 6.46 (d, 1H); 6.23 (d, 1H); 5.54 (hept., 1H); 1.58 (d, 6H); 1.40 (d, 3H); 1.25 (d, 3H).

Preparation Example P6: Preparation of 3-bromo-1,5-dimethyl-4-isopropoxy-8-oxa-bicyclo-[3.2.1]octa-3,6-dien-2-one

A solution of 2.74 g (8.9 mmol) of 3,4-dibromo-1,5-dimethyl-8-oxa-bicyclo[3.2.1]octa-3,6-dien-2-one (prepared according to *Organic Lett.* 4(12), 1997 (2002)) dissolved in 10 ml of tetrahydrofuran is added dropwise at ambient temperature to a solution of 5.4 ml (10.7 mmol) of 2M lithium isopropanolate diluted with 10 ml of tetrahydrofuran. The mixture is stirred for 3 hours at ambient temperature until the starting material has reacted completely (TLC monitoring: hexane/ethyl acetate/hexane 4:1). The reaction solution is then treated at a temperature of 0°C with a 10% sodium dihydrogen phosphate solution (20 ml) and water (30 ml) and extracted three times with ethyl acetate. Drying over sodium sulfate and concentration by evaporation are carried out. For further purification, the dark oil so obtained is purified by chromatography over silica gel with 5% ethyl acetate in hexane.

1.73 g (68% of theory) of pure 3-bromo-1,5-dimethyl-4-isopropoxy-8-oxa-bicyclo[3.2.1]octa-3,6-dien-2-one are isolated.

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¹H NMR (300 MHz; CDCl₃) δ 6.46 (d, 1H); 6.23 (d, 1H); 5.54 (hept., 1H); 1.58 (d, 6H); 1.40 (d, 3H); 1.25 (d, 3H).

<u>Preparation Example P7: Preparation of 3-bromo-4,4-(1',2'-ethylenedioxy)-bicyclo[3.2.1]oct-6-en-2-one:</u>

A sodium glycolate solution is prepared by stirring 124 mg (5.4 mmol) of metallic sodium into 2.7 ml (42.42 mmol) of anhydrous ethylene glycol at ambient temperature and, when the sodium has completely dissolved, 1.5 ml of tetrahydrofuran are added. To the resulting monosodium glycolate solution there is then added dropwise a solution of 1 g (3.6 mmol) of 3,4-dibromo-bicyclo[3.2.1]octa-3,6-dien-2-one (prepared according to *Organic Lett. 4*(12), 1997 (2002)) dissolved in 5 ml of tetrahydrofuran. The reaction mixture is then stirred at ambient temperature for 90 minutes with TLC monitoring (mobile phase hexane/ethyl acetate 4:1). The reaction mixture is then treated with 8 ml of 10% sodium dihydrogen phosphate solution and extracted with ethyl acetate (3x). The organic phase is washed with water to remove ethylene glycol, then dried and concentrated by evaporation. 930 mg (~100%) of 3-bromo-4,4-ethylenedioxy-bicyclo[3.2.1]oct-6-en-2-one are obtained in the form of a white solid.

¹H NMR (300 MHz; CDCl₃) δ 6.38 (m, 1H); 6.25 (m, 1H); 5.46 (s, 1H); 4.25 (m, 2H); 4.04 (m, 2H); 3.38 (m, 1H); 2.98 (m, 1H); 2.40 (m, 1H); 2.25 (m, 1H).

<u>Preparation Example P8: Preparation of 4,4-(1',2'-ethylenedioxy)-bicyclo[3.2.1]oct-6-en-2-one:</u>

A degassed solution of 920 mg (3.55 mmol) of 3-bromo-4,4-(1',2'-ethylenedioxy)-bicyclo-[3.2.1]oct-6-en-2-one in 90 ml of toluene is treated at boiling temperature in succession with a catalytic amount (30 mg) of AIBN and with 2.35 ml (8.88 mmol) of tributyltin hydride. To

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complete the reaction, the reaction mixture is maintained at reflux for a further 20 minutes, with TLC monitoring (mobile phase hexane/ethyl acetate 1:1). The reaction mixture is then concentrated by evaporation under reduced pressure. The residue is taken up in a small amount of acetonitrile and extracted five times with a small amount of hexane in order to remove tin-containing secondary products. The acetonitrile phase is then again concentrated by evaporation. 800 mg of 4,4-(1',2'-ethylenedioxy)-bicyclo[3.2.1]oct-6-en-2-one are obtained in the form of a yellow oil, which can be transferred directly to the next reaction step without further purification.

 1 H NMR (300 MHz; CDCl₃) δ 6.30 (m, 1H); 6.12 (m, 1H); 4.02-3.90 (m, 2 x 2H); 3.10 (m, 1H); 3.06 (d, 1H); 2.83 (m, 1H); 2.45 (d, 1H); 2.40-2.25 (m, 2 x 1H).

Preparation Example P9: Bicyclo[3.2.1]oct-6-ene-2,4-dione:

a) 640 mg (3.55 mmol) of 4,4-(1',2'-ethylenedioxy)-bicyclo[3.2.1]oct-6-en-2-one are heated for 16 hours at a temperature of 70°C in the presence of 200 mg of p-toluenesulfonic acid in a 2:1 mixture of acetone and water. After hydrolysis is complete (TLC monitoring: ethyl acetate / hexane 1:1), the acetone is distilled off under reduced pressure and the aqueous phase is adjusted to pH 9 with saturated sodium hydrogen carbonate solution. After extraction of the aqueous phase three times with ethyl acetate, it is acidified to pH 5 with dilute hydrochloric acid. Extraction is carried out three times with fresh ethyl acetate, followed by drying over sodium sulfate and concentration by evaporation *in vacuo*. 364 mg (75%) of pure bicyclo[3.2.1]oct-6-ene-2,4-dione are obtained in the form of a yellow oil for further reaction to form compounds of formula I.

¹H NMR (300 MHz; CDCl₃) δ 6.22 (m, 2H); 3.50 (d, 1H); 3.45 (m, 2H); 3.22 (d, 1H); 2.60-2.45 (m, 2 x 1H).

b) One-pot process: 100 mg (0.39 mmol) of 3-bromo-4,4-(1',2'-ethylenedioxy)-bicyclo[3.2.1]-oct-6-en-2-one are taken up in concentrated acetic acid and treated at ambient temperature with 80 mg (1.16 mmol) of zinc powder. The progress of the reaction is monitored by means of thin-layer chromatography (mobile phase: hexane/ethyl acetate 1:1). When after 2 hours brominated starting material can no longer be detected, the reaction mixture is heated cont-

inuously at a temperature of 95°C. After a further 2 hours, according to thin-layer chromatography all the reference material 4,4-(1',2'-ethylenedioxy)-bicyclo[3.2.1]oct-6-en-2-one has reacted. The reaction mixture is filtered and concentrated *in vacuo*. The residue is treated with saturated sodium hydrogen carbonate solution and extracted three times with ethyl acetate. The alkaline aqueous phase is adjusted to pH 3-4 with dilute hydrochloric acid and extracted three times with fresh ethyl acetate. After drying of the organic phase over sodium sulfate and subsequent concentration by evaporation, 45 mg (85% of theory) of technically pure bicyclo[3.2.1]oct-6-ene-2,4-dione are obtained.

<u>Preparation Example P10: Preparation of 3-[2-(2-methoxy-ethoxymethyl)-6-trifluoromethyl-pyridine-3-carbonyl]-1,5-dimethyl-8-oxa-bicyclo[3.2.1]oct-6-ene-2,4-dione:</u>

146 mg (0.879 mmol) of 1,5-dimethyl-8-oxa-bicyclo[3.2.1]oct-6-ene-2,4-dione and 245 mg (0.879 mmol) of 2-(2-methoxy-ethoxymethyl)-6-trifluoromethyl-nicotinic acid (preparation as described in WO 01/94339) are dissolved in 29 ml of acetonitrile and treated at ambient temperature with 199 mg (0.966 mmol) of dicyclohexylcarbodiimide. The reaction mixture is stirred for 2 hours and then 0.184 ml (1.318 mmol) of triethylamine and 0.08 ml (0.879 mmol) of acetone cyanohydrin are added. Stirring is carried out for a further 16 hours at ambient temperature, followed by concentration under reduced pressure. The residue that remains behind is chromatographed over silica gel (eluant: toluene / ethanol / dioxane / triethylamine / water 20:8:4:4:1). The product-containing fraction is concentrated. The oily residue is again dissolved in fresh ethyl acetate and washed with 10 ml of dilute hydrochloric acid (pH 1), and then with water (2x) and sodium chloride solution (2x). After the solution has been dried over sodium sulfate and concentrated by evaporation under reduced pressure, 128 mg (34%) of 3-[2-(2-methoxy-ethoxymethyl)-6-trifluoromethyl-pyridine-3-carbonyl]-1,5-dimethyl-8-oxa-bicyclo[3.2.1]oct-6-ene-2,4-dione are obtained in the form of a yellow oil.

¹H NMR (300 MHz; CDCl₃) δ 16.1 (br. s, 1H); 7.68 (m, 2 x 1H); 6.29 (d, 1H); 6.22 (d, 1H); 4.72 (m, 2H); 3.48 (m, 2H); 3.37 (m, 2H); 3.32 (s, 3H); 1.68 (s, 3H); 1.48 (s, 3H).

Preparation Example P11: 3-Chloro-bicyclo[3.2.2]non-6-ene-2,4-dione:

0.7 g (2.7 mmol) of 2,3,4,4-tetrachloro-bicyclo[3.2.2]nona-2,6-diene (known from US-A-3 538 117) is heated in a mixture of 1 ml of trifluoroacetic acid, 4 ml of acetic acid and 1 ml of water for 18 hours at a temperature of 70°C. The cooled reaction solution is then taken up in diethyl ether and extracted first with water and then with saturated sodium chloride solution. After chromatographic purification (ethyl acetate/hexane 1:4), 0.33 g of 3-chloro-bicyclo-[3.2.2]non-6-ene-2,4-dione is obtained as a tautomeric mixture of the forms Da and Db.

 $^{1}\text{H-NMR}$ (300 MHz; CDCl₃) δ 8.58 (b, 1H); 6.38 (m, 2H); 3.78 (m, 2H); 2.05 to 1.80 (m, 4H); tautomeric form Db.

Preparation Example P12: Bicyclo[3.2.2]non-6-ene-2,4-dione:



0.19 g (1 mmol) of 3-chloro-bicyclo[3.2.2]non-6-ene-2,4-dione is treated in the presence of 4 ml of acetic acid with 0.27 g (4 mmol) of zinc and the mixture is heated for 3 hours at a temperature of 95°C. The cooled reaction mixture is then extracted with ethyl acetate against water and then washed again with saturated sodium chloride solution. 0.14 g of amorphous bicyclo[3.2.2]non-6-ene-2,4-dione is obtained as tautomeric form Da.

 $^{1}\text{H-NMR}$ (300 MHz; CDCl₃) δ 6.22 (m, 2H); 3.58 to 3.51 (m, 2H); 2.12 (m, 2H); 1.92 (m, 2H).

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Preparation Example P13: 5-Bromo-7,8-dioxo-bicyclo[2.2.2]oct-5-ene-2-carboxylic acid methyl ester:

3 g (9.4 mmol) of 5-bromo-8,8-dimethoxy-7-oxo-bicyclo[2.2.2]oct-5-ene-2-carboxylic acid methyl ester (J.O.C. (202), 67, 6493) are stirred in a mixture of 15 ml of trifluoroacetic acid and 1 ml of water for 12 hours at room temperature. Extraction is then carried out with dichloromethane against water. The organic phase is dried over sodium sulfate and yields, after removal of the solvent, the 5-bromo-7,8-dioxo-bicyclo[2.2.2]oct-5-ene-2-carboxylic acid methyl ester in the form of an orange-coloured oil and as a pure isomer.

 1 H-NMR (300 MHz; CDCl₃) δ 6.62 (d, 1H); 3.97 (d, 1H); 3.80 (s, 3H); 3.70 (m, 1H); 3.20 (d, 1H); 2.63 (m, 1H); 2.40 (m, 1H).

Preparation Example P14: 8-Bromo-2,4-dioxo-bicyclo[3.2.2]non-8-ene-6-carboxylic acid methyl ester

4.2 ml of trimethylsilyl-diazomethane are added dropwise at a temperature of –10°C to a solution of 1.91 g (7 mmol) of 5-bromo-7,8-dioxo-bicyclo[2.2.2]oct-5-ene-2-carboxylic acid methyl ester in 20 ml of dichloromethane and 0.089 ml (0.7 mmol) of boron trifluoride etherate. The cooling is removed and the reaction mixture is stirred for 4 hours at a temperature of 20°C. The reaction solution is then extracted with water, the organic phase is dried over sodium sulfate and concentrated by evaporation using a rotary evaporator, and the residue is purified by silica gel chromatography. An isomer of 8-bromo-2,4-dioxo-bicyclo[3.2.2]non-8-ene-6-carboxylic acid methyl ester is obtained.

 1 H-NMR (300 MHz; CDCl₃) δ 6.42 (d, 1H); 3.86 (d, 1H); 3.75 (d, 1H); 3.68 (s, 3H); 3.65 (m, 1H); 3.43 (d, 1H); 3.10 (m, 1H); 2.52 (m, 1H); 2.34 (m, 1H); tautomeric form Da.

<u>Preparation Example P15: 3-(2-Methyl-6-difluoromethyl-pyridine-3-carbonyl)-2,4-dioxobicyclo[3.2.2]non-8-ene-6-carboxylic acid methyl ester</u>

Catalytic amounts (10 mg) of azaisobutyronitrile are added to a solution of 0.10 g (0.24 mmol) of 8-bromo-3-(2-methyl-6-difluoromethyl-pyridine-3-carbonyl)-2,4-dioxo-bicyclo-[3.2.2]non-8-ene-6-carboxylic acid methyl ester (Example 1.1155) and 0.149 ml (0.48 mmol) of tris(trimethylsilyl)silane in 3.5 ml of toluene and the reaction mixture is stirred at a temperature of 80°C. 5 mg portions of fresh azaisobutyronitrile dissolved in a small amount of toluene are then added four times until, after 6 days, the reaction has come to a complete standstill (LC-MS monitoring). The solvent is then removed under reduced pressure and the residue is purified by silica gel chromatography (eluant: gradient mixture of ethyl acetate / tetrahydrofuran / hexane and 3% triethylamine). After removal of the solvents the triethylammonium salt of 3-(2-methyl-6-difluoromethyl-pyridine-3-carbonyl)-2,4-dioxo-bicyclo-[3.2.2]non-8-ene-6-carboxylic acid methyl ester is obtained.

 1 H-NMR (300 MHz; CDCl₃) δ 7.30 (m, 2H); 6.51 (t, 1H); 6.35 (m, 1H); 6.18 (m, 1H); 3.68 (m, 1H); 3.52 (s, 3H); 3.35 (m, 1H); 3.24 (m, 1H); 3.00 (q, 6H); 2.40 (s, 3H); 2.38 (m, 1H); 2.14 (m, 1H); 1.18 (t, 9H).

The following Tables 1 to 3 list preferred compounds of formula I. The linkage site of the substituent Z_1 to the pyridine ring is the unsaturated valency; the free bonds represent methyl groups. For example, in the group

the -CH₂ group at the nitrogen atom adjacent to the keto group is the linkage site; the free bond at the nitrogen atom represents methyl. That group can also be depicted as follows:

Table 1: Compounds of formula lb:

$$\begin{array}{c|ccccc} OH & O & Z_1 & (O)p & \\ \hline R_1 & & & & \\ \hline R_2 & & & & \\ \hline R_{30} & & F & \\ \end{array}$$
 (Ib)

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0000	Н	Н	CH₃	Н	F	NSO₂CH₃	0
1.0001	Н	Н	CH₃	Н	Cl	NSO₂CH₃	0
1.0002	Н	Н	CH₃	Н	Н	NSO₂CH₃	0
1.0003	Н	Н	CH₃	CH₃	F	NSO₂CH₃	0
1.0004	Н	Н	CH ₃	CH₃	Cl	NSO₂CH₃	0
1.0005	Н	Н	CH₃	CH₃	Н	NSO₂CH₃	0
1.0006	Н	Н	CH₂CH₃	Н	F	NSO₂CH₃	0
1.0007	Н	Н	CH₂CH₃	Н	Cl	NSO₂CH₃	0
1.0008	Н	Н	CH₂CH₃	Н	Н	NSO₂CH₃	0
1.0009	Н	Н	CH ₂ CH ₂ CH ₃	Н	F	NSO₂CH₃	0
1.0010	Н	H	CH ₂ CH ₂ CH ₃	Н	CI	NSO₂CH₃	0
1.0011	Н	Н	CH₂CH₂CH₃	Н	Н	NSO₂CH₃	0
1.0012	Н	н	CH₂OCH₃	Н	F	NSO₂CH₃	0
1.0013	Н	Н	CH₂OCH₃	Н	CI	NSO₂CH₃	0
1.0014	Н	Н	CH₂OCH₃	Н	Н	NSO₂CH₃	0
1.0015	Н	Н	CH₂OCH₂CH₃	Н	F	NSO₂CH₃	0
1.0016	Н	Н	CH ₂ OCH ₂ CH ₃	Н	CI	NSO₂CH₃	0
1.0017	Н	Н	CH₂OCH₂CH₃	Н	Н	NSO₂CH₃	0

No.	R₁	R ₂	Z ₁ ,	R ₃₀	X	Υ	p Physical data
1.0018	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	F	NSO₂CH₃	0
1.0019	Н	Н	CH2OCH2CH2OCH3	Н	CI	NSO₂CH₃	0
1.0020	Н	Н	CH2OCH2CH2OCH3	Н	Н	NSO₂CH ₃	0 .
1.0021	Н	Н	CH2OCH2CH2OCH2CH3	Н	F	NSO₂CH₃	0
1.0022	Н	Н	CH2OCH2CH2OCH2CH3	Н	CI	NSO₂CH₃	0
1.0023	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	NSO₂CH₃	0
1.0024	Н	Н	CH₂CH₂OCH₃	Н	F	NSO₂CH₃	0
1.0025	Н	Н	CH₂CH₂OCH₃	Н	CI	NSO₂CH₃	0
1.0026	Н	Н	CH₂CH₂OCH₃	Н	Н	NSO₂CH₃	0
1.0027	Н	Н	CH ₂ OCH ₂ C≡CH	Н	F	NSO₂CH₃	0
1.0028	Н	Н	CH ₂ OCH ₂ C≡CH	Н	CI	NSO₂CH₃	0
1.0029	Н	Н	CH ₂ OCH ₂ C≡CH	Н	Н	NSO₂CH₃	0
1.0030	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	Н	F	NSO₂CH₃	0
1.0031	Н	Н	CH₂OCH₂C≡CCH₃	Н	CI	NSO₂CH₃	0
1.0032	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	Н	Н	NSO ₂ CH ₃	0
1.0033	Н	Н	CH₂CH₂CH₂OCH₃	Н	F	NSO₂CH₃	0
1.0034	Н	Н	CH₂CH₂CH₂OCH₃	Н	CI	NSO₂CH₃	0
1.0035	Н	Н	CH₂CH₂CH₂OCH₃	Н	Н	NSO₂CH₃	0
1.0036	Н	Н	CH₂OCH₂OCH₃	Н	F	NSO₂CH₃	0
1.0037	' H	Н	CH₂OCH₂OCH₃	Н	CI	NSO₂CH₃	0
1.0038	3 H	Н	CH₂OCH₂OCH₃	Н	Н	NSO₂CH₃	0
1.0039	Н	Н	CH₂N(CH₃)SO₂CH₃	Н	F	NSO₂CH₃	0
1.0040	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	CI	NSO₂CH₃	0
1.004	1 H	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	NSO₂CH₃	0
1.0042	2 H	. Н	CF ₃	. Н	F	NSO₂CH₃	0
1.004	3 H	Н	CF ₃	Н	CI	NSO₂CH₃	0
1.004	4 H	I Н	CF ₃	Н	Н	NSO₂CH₃	0
1.004	5 H	Н	CH₂OCH₂CF₃	Н	F	NSO₂CH₃	0
1.004	6 H	ı H	CH₂OCH₂CF₃	Н	Cl	NSO₂CH₃	0
1.004	7 H	i H	CH₂OCH₂CF₃	Н	Н	NSO₂CH₃	0
1.004	8 F	i H	CH₂OCH₂Ph	Н	l F	NSO₂CH₃	0
1.004	9 F	i H	CH₂OCH₂Ph	H	l CI	NSO₂CH₃	0
1.005	0 F	1 H	CH₂OCH₂Ph	H	н н	NSO₂CH₃	0

No.	R₁	R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0051	Н	Н	CH₂OCH₂CH=CH₂	Н	F	NSO ₂ CH ₃	0
1.0052	Н	Н	CH ₂ OCH ₂ CH=CH ₂	Н	CI	NSO₂CH₃	0
1.0053	Н	Н	CH2OCH2CH=CH2	Н	Н	NSO₂CH₃	0
1.0054	Н	Н	CH ₂ NN-	Н	F	NSO₂CH₃	0
1.0055	Н	Н	CH ₂ N N N O	Н	Cl	NSO₂CH₃	0
1.0056	Н	Н	CH ₂ N N N N N N N N N N N N N N N N N N N	Н	Н	NSO₂CH₃	0
1.0057	Н	н	CH ₂ O O	Н	F	NSO₂CH₃	0
1.0058	Н	Н	CH ₂ O O	Н	Cl	NSO₂CH₃	0 .
1.0059	Н	Н	CH ₂ O	Н	Н	NSO ₂ CH₃	0
1.0060) Н	н	CH ₂	Н	F	NSO₂CH₃	0
1.0061	Н	Н	CH ₂ O	Н	Cl	NSO₂CH₃	0
1.0062	2 H	Н	CH ₂ O	Н	Н	NSO₂CH₃	0
1.006	3 H	Н	CH ₂ OCH ₂	Н	F	NSO₂CH₃	0
1.0064	4 H	Н	CH ₂ OCH ₂	H	ı Cl	NSO ₂ CH₃	0

No.	R₁	R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0065	Н	Н	CH ₂ OCH ₂	Н	Н	NSO ₂ CH₃	0
1.0066	Н	Н	0	Н	F	NSO₂CH₃	0
1.0000	П	11	CH ₂ O O	••	•		
1.0067	Н	Н	^ 0	Н	CI	NSO₂CH₃	0
			CH₂O				
1.0068	Ĥ	Н		Н	Н	NSO ₂ CH₃	0
			CH₂O ✓		-	NOO OU	0
1.0069	Н	Н		Н	F	NSO₂CH₃	0
			CH ₂ O				
1.0070	Н	Н	\bigcap_{Ω}	Н	CI	NSO₂CH₃	0
			CH ₂ O				
1.0071	Н	Н	\bigcap	Н	Н	NSO₂CH₃	0
			CH ₂ O O				
1.0072	Н	Н	CH₃	Н	F	NSO₂CH₃	1
1.0073	Н	Н	CH₂OCH₃	Н	F	NSO ₂ CH ₃	1
1.0074	Н	Н	CH2OCH2CH2OCH3	Н	F ·	NSO₂CH₃	1
1.0075	Н	Н	CH ₂ CH ₂ CH ₂ OCH ₃	Н	F	NSO₂CH₃	1
1.0076	Н	Н	CH₂CH₃	Н	F	NSO₂CH₃	1
1.0077	Н	Н	CH₃	Н	Н	NSO₂CH₃	1
1.0078	з Н	Н	CH₂OCH₃	Н	Н	NSO₂CH₃	1
1.0079	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	Н	NSO₂CH₃	1
1.0080	Н	Н	CH ₂ CH ₂ CH ₂ OCH ₃	Н	H	NSO₂CH₃	1
1.008	ı H	Н	CH₂CH₃	Н	Н	NSO₂CH₃	1
1.0082	2 CH	I₃ CH₃	CH ₃	Н	F	NSO₂CH₃	0
1.008	3 CH	I₃ CH₃	CH₃	Н	CI	NSO₂CH₃	0
1.008	4 CH	H₃ CH₃	CH₃	Н	Н	NSO₂CH₃	0
1.008	5 CH	H₃ CH₃	CH₃	CH	l₃ F	NSO₂CH₃	0
1.008	6 CH	H ₃ CH ₃	CH₃	Ch	l ₃ Cl	NSO₂CH₃	0
1.008	7 CH	H₃ CH₃	CH₃	CH	1 ₃ H	NSO₂CH₃	0
1.008	8 CI	H₃ CH₃	CH₂CH₃	Н	F	NSO₂CH₃	0

No. R ₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.0089 CH ₃	CH₃	CH₂CH₃	Н	CI	NSO₂CH₃	0
1.0090 CH ₃	CH₃	CH₂CH₃	Н	Н	NSO ₂ CH ₃	0
1.0091 CH₃	CH₃	CH₂CH₂CH₃	Н	F	NSO ₂ CH ₃	0
1.0092 CH₃	CH₃	CH₂CH₂CH₃	Н	CI	NSO₂CH₃	0
1.0093 CH ₃	CH₃	CH₂CH₂CH₃	Н	Н	NSO ₂ CH ₃	0
1.0094 CH₃	CH₃	CH₂OCH₃	Н	F	NSO₂CH₃	0
1.0095 CH₃	CH₃	CH₂OCH₃	Н	CI	NSO₂CH₃	0
1.0096 CH₃	CH ₃	CH ₂ OCH ₃	Н	Н	NSO₂CH₃	0
1.0097 CH₃	CH ₃	CH ₂ OCH ₂ CH ₃	Н	F	NSO₂CH₃	0
1.0098 CH ₃	CH₃	CH₂OCH₂CH₃	Н	CI	NSO₂CH₃	0
1.0099 CH ₃	CH₃	CH₂OCH₂CH₃	Н	Н	NSO₂CH₃	0
1.0100 CH₃	CH ₃	CH2OCH2CH2OCH3	Н	F	NSO₂CH₃	0
1.0101 CH₃	CH₃	CH₂OCH₂CH₂OCH₃	Н	CI	NSO ₂ CH ₃	0
1.0102 CH₃	CH₃	CH2OCH2CH2OCH3	Н	Н	NSO₂CH₃	0
1.0103 CH₃	CH ₃	CH2OCH2CH2OCH2CH3	Н	F	NSO₂CH₃	0
1.0104 CH₃	CH ₃	CH2OCH2CH2OCH2CH3	Н	CI	NSO₂CH₃	0
1.0105 CH₃	CH₃	CH2OCH2CH2OCH2CH3	Н	Н	NSO₂CH₃	0
1.0106 CH ₃	CH₃	CH₂CH₂OCH₃	Ή	F	NSO₂CH₃	0
1.0107 CH ₃	CH ₃	CH₂CH₂OCH₃	Н	CI	NSO₂CH₃	0
1.0108 CH ₃	3 CH₃	CH₂CH₂OCH₃	Н	Н	NSO ₂ CH ₃	0
1.0109 CH	₃ CH₃	CH₂OCH₂C≡CH	Н	F	NSO ₂ CH ₃	0
1.0110 CH	₃ CH₃	CH₂OCH₂C≡CH	Н	CI	NSO₂CH₃	0
1.0111 CH	₃ СН₃	CH₂OCH₂C≡CH	Н	Н	NSO₂CH₃	0
1.0112 CH	₃ СН₃	CH ₂ OCH ₂ C≡CCH ₃	Н	F	NSO₂CH₃	0
1.0113 CH	₃ CH₃	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	NSO₂CH₃	0
1.0114 CH	₃ СН₃	CH ₂ OCH ₂ C≡CCH ₃	Н	Н	NSO₂CH₃	0
1.0115 CH	₃ CH₃	CH₂CH₂CH₂OCH₃	Н	F	NSO₂CH₃	0
1.0116 CH	l₃ CH₃	CH₂CH₂CH₂OCH₃	Н	CI	NSO₂CH₃	0
1.0117 CH	l₃ CH₃	CH ₂ CH ₂ CH ₂ OCH ₃	Н	Н	NSO₂CH₃	0
1.0118 CH	l₃ CH₃	CH ₂ OCH ₂ OCH ₃	Н	F	NSO₂CH₃	0 .
1.0119 CH	l₃ CH₃	CH ₂ OCH ₂ OCH ₃	Н	CI	NSO₂CH₃	0
1.0120 CH	I₃ CH₃	CH₂OCH₂OCH₃	Н	I Н	NSO₂CH₃	0
1.0121 CF	I₃ CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	F	I F	NSO ₂ CH ₃	0

No. R ₁ R ₂	Z ₁	R ₃₀ X	Υ	p Physical data
1.0122 CH ₃ CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	H CI	NSO ₂ CH ₃	0
1.0123 CH ₃ CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	н н	NSO₂CH₃	0
1.0124 CH ₃ CH ₃	CF₃	H F	NSO₂CH₃	0
1.0125 CH ₃ CH ₃	CF₃	H CI	NSO₂CH₃	0
1.0126 CH ₃ CH ₃	CF₃	н н	NSO ₂ CH ₃	0
1.0127 CH ₃ CH ₃	CH₂OCH₂CF₃	H F	NSO₂CH₃	0
1.0128 CH ₃ CH ₃	CH₂OCH₂CF₃	H CI	NSO₂CH₃	0
1.0129 CH ₃ CH ₃	CH ₂ OCH ₂ CF ₃	н н	NSO₂CH₃	0
1.0130 CH ₃ CH ₃	CH₂OCH₂Ph	H F	NSO ₂ CH₃	0
1.0131 CH ₃ CH ₃	CH₂OCH₂Ph	H CI	NSO₂CH₃	0
1.0132 CH ₃ CH ₃	CH ₂ OCH ₂ Ph	н н	NSO₂CH₃	0
1.0133 CH₃ CH₃	CH ₂ OCH ₂ CH=CH ₂	H F	NSO₂CH₃	0
1.0134 CH ₃ CH ₃	CH ₂ OCH ₂ CH=CH ₂	H CI	NSO₂CH₃	0
1.0135 CH₃ CH₃	CH ₂ OCH ₂ CH=CH ₂	н н	NSO ₂ CH ₃	0
1.0136 CH₃ CH₃	CH ₂ N N O	H F	NSO₂CH₃	0
1.0137 CH ₃ CH ₃	CH ₂ N N N N N N N N N N N N N N N N N N N	H CI	NSO₂CH₃	0
1.0138 CH₃ CH₃	CH ₂ N N O	н н	NSO₂CH₃	0
1.0139 CH₃ CH₃	CH ₂ O	H F	NSO₂CH₃	0
1.0140 CH ₃ CH ₃	CH ₂ O	H CI	NSO₂CH₃	0
1.0141 CH ₃ CH ₃	CH ₂ O O	н н	NSO₂CH₃	0

No. R ₁ R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0142 CH ₃ CH ₃	CH ₂	Н	F	NSO ₂ CH ₃	0
1.0143 CH₃ CH₃	CH ₂ O	Н	CI	NSO ₂ CH ₃	0
1.0144 CH ₃ CH ₃	CH ₂ O	Н	Н	NSO₂CH₃	0
1.0145 CH ₃ CH ₃	CH ₂ OCH ₂	Н	F	NSO₂CH₃	0
1.0146 CH ₃ CH ₃	CH ₂ OCH ₂	Н	CI	NSO₂CH₃	0
1.0147 CH ₃ CH ₃	CH ₂ OCH ₂	Н	Н	NSO₂CH₃	0
1.0148 CH ₃ CH ₃	CH ₂ O 0	н	F	NSO₂CH₃	0
1.0149 CH₃ CH₃	CH ₂ O	Н	CI	NSO₂CH₃	0
1.0150 CH₃ CH₃	CH,0 0	Н	Н	NSO₂CH₃	0
1.0151 CH ₃ CH ₃	CH,0 0	Н	F	NSO₂CH₃	0
1.0152 CH₃ CH₃	CH,O O	Н	CI	NSO₂CH₃	0
1.0153 CH₃ CH₃	CH ₂ O O	Н	Н	NSO₂CH₃	0
1.0154 CH₃ CH₃	CH₃	Н	F	NSO₂CH₃	1
1.0155 CH₃ CH₃	CH₂OCH₃	Н	F	NSO ₂ CH₃	1
1.0156 CH ₃ CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	F	NSO ₂ CH ₃	1
1.0157 CH₃ CH₃	CH2CH2CH2OCH3	Н	F	NSO₂CH₃	1
1.0158 CH₃ CH₃	CH₂CH₃	Н	l F	NSO₂CH₃	1
1.0159 CH ₃ CH ₃	CH₃	Н	I Н	NSO₂CH₃	1
1.0160 CH ₃ CH ₃	CH₂OCH₃	۲	і н	NSO ₂ CH ₃	1

No.	R₁	R ₂	Z ₁	R ₃₀	X	Y	p Physical data
1.0161	CH₃	CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	Н	NSO₂CH₃	1
1.0162	CH ₃	CH₃	CH₂CH₂CH₂OCH₃	Н	Н	NSO₂CH₃	1
1.0163	CH₃	CH₃	CH₂CH₃	Н	Н	NSO₂CH₃	1
1.0164	Н	CH ₃	CH₃	Н	F	NSO₂CH₃	0
1.0165	Н	CH ₃	CH₃	Н	CI	NSO₂CH₃	0
1.0166	Н	CH ₃	CH ₃	Н	Н	NSO₂CH₃	0
1.0167	Н	CH ₃	CH₃	CH₃	F	NSO₂CH₃	0
1.0168	Н	CH₃	CH₃	CH₃	CI	NSO₂CH₃	0
1.0169	Н	CH ₃	CH₃	CH ₃	Н	NSO₂CH₃	0
1.0170	Н	CH₃	CH₂CH₃	Н	F	NSO₂CH₃	0 .
1.0171	Н	CH₃	CH₂CH₃	Н	CI	NSO₂CH₃	0
1.0172	Н	CH₃	CH₂CH₃	Н	Н	NSO₂CH₃	0
1.0173	н	CH₃	CH₂CH₂CH₃	Н	F	NSO₂CH₃	0
1.0174	Н	CH₃	CH ₂ CH ₂ CH ₃	Н	CI	NSO₂CH₃	0
1.0175	Н	CH ₃	CH₂CH₂CH₃	Н	Н	NSO₂CH₃	0
1.0176	Н	CH₃	CH₂OCH₃	Н	F	NSO₂CH₃	0
1.0177	7 H	CH₃	CH₂OCH₃	Н	CI	NSO₂CH₃	0
1.0178	3 H	CH₃	CH₂OCH₃	Н	Н	NSO₂CH₃	0
1.0179	ЭН	CH₃	CH ₂ OCH ₂ CH ₃	H	F	NSO₂CH₃	0
1.0180) Н	CH₃	CH ₂ OCH ₂ CH ₃	H	CI	NSO ₂ CH₃	0
1.018	1 H	CH₃	CH₂OCH₂CH₃	Н	Н	NSO₂CH₃	0
1.018	2 H	CH₃	CH2OCH2CH2OCH3	Н	F	NSO₂CH₃	0
1.018	3 H	CH₃	CH2OCH2CH2OCH3	Н	CI	NSO₂CH₃	0
1.018	4 H	CH₃	CH2OCH2CH2OCH3	Н	Н	NSO₂CH₃	0
1.018	5 H	CH₃	CH2OCH2CH2OCH2CH3	Н	F	NSO₂CH₃	0
1.018	6 H	I CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	, н	CI	NSO₂CH₃	0
1.018	7 H	I CH₃	CH2OCH2CH2OCH2CH3	, Н	Н	NSO₂CH₃	0
1.018	8 F	I CH₃	CH₂CH₂OCH₃	Н	F	NSO₂CH₃	0
1.018	9 F	I CH₃	CH₂CH₂OCH₃	Н	CI	NSO₂CH₃	0
1.019	0 F	H CH ₃	CH₂CH₂OCH₃	Н	Н	NSO₂CH₃	0
1.019)1 F	н СН₃	CH₂OCH₂C≡CH	Н	F	NSO ₂ CH₃	0
1.019	92 H	н СН₃	CH₂OCH₂C≡CH	Н	CI	NSO₂CH₃	0
1.019	93 F	н СН₃	CH ₂ OCH ₂ C≡CH	Н	Н	NSO₂CH₃	0

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0194	Н	CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	F	NSO ₂ CH ₃	0
1.0195	Н	CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	NSO₂CH₃	0
1.0196	Н	CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	Н	NSO₂CH₃	0
1.0197	H	CH ₃	CH ₂ CH ₂ CH ₂ OCH ₃	Н	F	NSO₂CH₃	0
1.0198	Н	CH ₃	CH₂CH₂CH₂OCH₃	Н	CI	NSO₂CH₃	0
1.0199	Н	CH ₃	CH ₂ CH ₂ CH ₂ OCH ₃	Н	Н	NSO₂CH₃	0
1.0200	Н	CH ₃	CH ₂ OCH ₂ OCH ₃	Н	F	NSO₂CH₃	0
1.0201	Н	CH ₃	CH₂OCH₂OCH₃	Н	CI	NSO ₂ CH₃	0
1.0202	Н	CH₃	CH₂OCH₂OCH₃	Н	Н	NSO₂CH₃	0
1.0203	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	NSO₂CH₃	0
1.0204	Н	СН₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Cl	NSO₂CH₃	0
1.0205	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	NSO₂CH₃	0
1.0206	Н	CH₃	CF₃	Н	F	NSO₂CH₃	0
1.0207	Н	CH₃	CF ₃	Н	CI	NSO₂CH₃	0
1.0208	Н	CH ₃	CF ₃	Н	Н	NSO ₂ CH₃	0
1.0209	Н	СН₃	CH ₂ OCH ₂ CF ₃	Н	F	NSO₂CH₃	0
1.0210	Н	CH₃	CH ₂ OCH ₂ CF ₃	Н	CI	NSO₂CH₃	0
1.0211	Н	CH₃	CH ₂ OCH ₂ CF ₃	Н	Н	NSO₂CH₃	0
1.0212	Н	CH ₃	CH₂OCH₂Ph	Н	F	NSO₂CH₃	0
1.0213	Н	CH₃	CH₂OCH₂Ph	Н	CI	NSO₂CH₃	0
1.0214	Н	CH₃	CH₂OCH₂Ph	Н	Н	NSO₂CH₃	0
1.0215	Н	CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	F	NSO ₂ CH₃	0
1.0216	Н	CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	Cl	NSO₂CH₃	0
1.0217	' Н	I CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	Н	NSO₂CH₃	0
1.0218	3 H	I CH₃	CH ₂ NNN	Н	F	NSO₂CH₃	0
1.0219	∂ ⊦	l CH₃	CH ₂ N N	Н	CI	NSO₂CH₃	0

No. R ₁ R ₂	Z ₁	R ₃₀ X	Υ	p Physical data
1.0220 H CH ₃	CH ₂ N N O	н н	NSO₂CH₃	0
1.0221 H CH₃	CH ₂ O O	н F	NSO₂CH₃	0
1.0222 H CH ₃	CH ₂ O	H CI	NSO₂CH₃	0
1.0223 H CH₃	CH ₂ O	н н	NSO₂CH₃	0
1.0224 H CH₃	CH ₂	H F	NSO₂CH₃	0
1.0225 H CH₃	CH ₂	H CI	NSO₂CH₃	0
1.0226 H CH₃	CH ₂ O	н н	NSO₂CH₃	0
1.0227 H CH ₃	CH ₂ OCH ₂ OO	H F	NSO₂CH₃	0
1.0228 H CH ₃	CH ₂ OCH ₂ OO	H CI	NSO₂CH₃	0
1.0229 H CH₃	CH ₂ OCH ₂	н н	NSO₂CH₃	0
1.0230 H CH₃	CH₂O CH₂O	H F	· NSO₂CH₃	0
1.0231 H CH₃	CH ₂ O	н сі	NSO₂CH₃	. 0
1.0232 H CH₃	CH₂O CH₂O	н н	NSO₂CH₃	0
1.0233 H CH₃	CH ₂ O O	H F	NSO₂CH₃	0

No.	R₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data	
1.0234	Н	CH₃		Н	CI	NSO ₂ CH ₃	0	
			CH ₂ O					
1.0235	Н	CH₃	CH₂O O	Н	Н	NSO₂CH₃	0	
1.0236	Н	CH₃	CH₃	Н	F	NSO₂CH₃	1	
1.0237	Н	CH₃	CH₂OCH₃	Н	F	NSO₂CH₃	1	
1.0238	Н	CH₃	CH2OCH2CH2OCH3	Н	F	NSO₂CH₃	1	
1.0239	Н	CH₃	CH₂CH₂CH₂OCH₃	Н	F	NSO₂CH₃	1	
1.0240	Н	CH₃	CH₂CH₃	Н	F	NSO₂CH₃	1	
1.0241	Н	СН₃	CH₃	Н	Н	NSO₂CH₃	1	
1.0242	Н	CH₃	CH₂OCH₃	Н	Н	NSO₂CH₃	1	
1.0243	Н	СН₃	CH₂OCH₂CH₂OCH₃	Н	Н	NSO₂CH₃	1	
1.0244	Н	CH₃	CH2CH2CH2OCH3	Н	Н	NSO₂CH₃	1	
1.0245	Н	СН₃	CH₂CH₃	Н	Н	NSO₂CH₃	1	
1.0246	Н	Н	CH₂OCH₂CH₂OCH₃	Н	F	0	0	
1.0247	Н	Н	CH₂OCH₂CH₂OCH₃	Н	CI	0	0	
1.0248	Н	Н	CH2OCH2CH2OCH3	Н	Н	0	0	
1.0249	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	0	0	
1.0250	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Cl	0	0	
1.0251	Н	Н	CH2OCH2CH2OCH2CH3	Н	Н	0	0	
1.0252	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	0	0	
1.0253	н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	CI	0	0	
1.0254	. н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	0	0	
1.0255	5 H	Н	CH₂OCH₂Ph	Н	F	0	0 .	
1.0256	6 H	Н	CH₂OCH₂Ph	Н	CI	0	0	
1.0257	7 H	ı H	CH₂OCH₂Ph	Н	Н	0	0	
1.0258	3 H	I Н	CH₂OCH₂CH₂OH	Н	F	0	0	
1.025	9 ⊢	H H	CH₂OCH₂CH₂OH	Н	CI	0	0	
1.026) F	н н	CH₂OCH₂CH₂OH	Н	I Н	. 0	0	
1.026	1 F	ł H	CH₂OCH₂CH₂CI	H	F	0	0	
1.026	2 F	н н	CH₂OCH₂CH₂ CI	ŀ	l CI	0	0	

No.	R ₁	R ₂	Z ₁	R ₃₀	X	Υ	p Physical data
1.0263	Н	Н	CH₂OCH₂CH₂ CI	Н	Н	0	0
1.0264	Н	Н	CH ₂ OCH ₂ CF ₃	Н	F	0	0
1.0265	Н	Н	CH₂OCH₂CF₃	Н	CI	0	0
1.0266	Н	Н	CH₂OCH₂CF₃	Н	Н	0	0
1.0267	Н	Н	CH ₂ OCH ₂ CH=CH ₂	н	F	0	0
1.0268	Н	Н	CH ₂ OCH ₂ CH=CH ₂	Н	CI	0	0
1.0269	Н	Н	CH ₂ OCH ₂ CH=CH ₂	Н	Н	0	0
1.0270	Н	Н	CH₂O(CO)CH₃	Н	F	0	0
1.0271	Н	Н	CH ₂ O(CO)CH ₃	Н	CI	0	0
1.0272	Н	Н	CH₂O(CO)CH₃	Н	Н	0	0
1.0273	Н	Н	CH₂OCH₂C≡CH	Н	F	0	0
1.0274	Н	Н	CH₂OCH₂C≣CH	Н	CI	0	0
1.0275	Н	Н	CH ₂ OCH ₂ C≡CH	Н	Н	0	0
1.0276	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	Н	F	0	0
1.0277	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	0	0
1.0278	Н	Н	CH₂OCH₂C≡CCH₃	Н	Н	0	0
1.0279	Н	Н	CH ₂ N N	H	F	0	0
1.0280	н	Н	CH ₂ NNN	Н	CI	0	0
1.0281	Н	Н	CH ₂ NNN-	Н	Н	0	0
1.0282	2 H	н	CH ₂ O O	Н	F	0	0
1.0283	3 H	Н	CH ₂ O	Н	CI	0	0

No.	R₁	R ₂	Z ₁	R ₃₀	X	Υ	p Physical data
1.0284	Н	Н	CH ₂ OOO	Н	Н	0	0
1.0285	Н	Н	CH ₂	Н	F	0	0
1.0286	Н	Н	CH ₂	Н	CI	0	0
1.0287	Н	Н	CH ₂	H.	Н	0	0
1.0288	Н	Н	CH ₂ OCH ₂	Н	F	0	0
1.0289	Н	Н	CH ₂ OCH ₂	Н	CI	0	0
1.0290	Н	Н	CH ₂ OCH ₂	Н	Н	0	0
1.0291	Н	н	CH₂O CO	Н	F	0	0
1.0292	Н	Н	CH ₂ O O	Н	CI	0	0
1.0293	н	Н	CH ₂ O O	Н	Н	0	0
1.0294	Н	Н	CH ₂ O O	Н	F	0	0
1.0295	5 H	Н	CH ₂ O O	H	CI	0	0
1.029	6 H	і Н	CH ₂ O O	Н	Н	0	0
1.029	7 H	н н		Н	F	. 0	1
1.029			CH₂OCH₂CH₂OCH₃	Н	Н	0	1
1.029		н	CH2OCH2CH2OCH2CH3	, н	F	0	1
1.030	o F	н н		₃ H	Н	0	1

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physica	al data
1.0301	CH₃	CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	F	0	0 see Ex	ample
							P10	
1.0302	СНз	CH ₃	CH2OCH2CH2OCH3	Н	CI	. 0	0	
1.0303	CH₃	СН₃	CH2OCH2CH2OCH3	Н	Н	0	0	
1.0304	CH₃	СН₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	0	0	
1.0305	СН₃	CH₃	$CH_2OCH_2CH_2OCH_2CH_3$	Н	CI	0	0	
1.0306	CH₃	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	0	0	•
1.0307	CH₃	CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	0	0	
1.0308	CH₃	CH₃	CH₂N(CH₃)SO₂CH₃	Н	CI	0	0	
1.0309	CH₃	CH₃	CH₂N(CH₃)SO₂CH₃	Н	Н	0	0	
1.0310	CH ₃	CH₃	CH₂OCH₂Ph	Н	F	0	0	
1.0311	CHa	CH ₃	CH₂OCH₂Ph	Н	CI	0	0	
1.0312	CH:	₃ CH ₃	CH₂OCH₂Ph	Н	Н	0	0	
1.0313	CH:	₃ CH₃	CH₂OCH₂CH₂OH	Н	F	0	0	
1.0314	CH:	3 CH3	CH ₂ OCH ₂ CH ₂ OH	Н	CI	0	0	
1.031	5 CH	3 CH3	CH ₂ OCH ₂ CH ₂ OH	Н	Н	0	0	
1.0316	5 CH	3 CH	CH₂OCH₂CH₂CI	Н	F	0	0	
1.031	7 CH	3 CH	CH ₂ OCH ₂ CH ₂ CI	Н	CI	0	0	
1.031	в СН	3 CH	CH₂OCH₂CH₂ CI	Н	Н	0	0	
1.031	9 CH	B CH	CH ₂ OCH ₂ CF ₃	Н	F	0	0	
1.032	0 CH	l₃ CH	CH ₂ OCH ₂ CF ₃	Н	CI	0	0	
1.032	1 CH	I₃ CH	3 CH ₂ OCH ₂ CF ₃	Н	Н	0	0	
1.032	2 CH	l₃ CH	3 CH ₂ OCH ₂ CH=CH ₂	Н	F	0	0	
1.032	3 CH	l₃ CH	3 CH2OCH2CH=CH2	Н	Cl	0	0	
1.032	4 CH	I₃ CH	3 CH ₂ OCH ₂ CH=CH ₂	Н	Н	0	0	
1.032	5 CH	l₃ CH	3 CH ₂ O(CO)CH ₃	Н	F	0	0	
1.032	26 CH	I₃ CH	CH ₂ O(CO)CH ₃	Н	Cl	0	0	
1.032	27 CH	H₃ CH	I ₃ CH ₂ O(CO)CH ₃	Н	Н	0	0	
1.032	28 CH	H₃ CH	I ₃ CH ₂ OCH ₂ C≡CH	Н	F	0	0	
1.032	29 CH	H₃ CH	I ₃ CH ₂ OCH ₂ C≡CH	Н	l Cl	0	0	
1.033	30 CI	H₃ CH	H ₃ CH ₂ OCH ₂ C≡CH	Н	н н	0	0	
1.033	31 CI	H₃ CH	H ₃ CH ₂ OCH ₂ C≡CCH ₃	Н	F	0	0	
1.03	32 CI	H₃ CH	H ₃ CH ₂ OCH ₂ C≡CCH ₃	۲	l Cl	0	0	

No. R ₁ R ₂	Z ₁	R ₃₀ X	Y	p Physical data
1.0333 CH ₃ CH ₃	CH ₂ OCH ₂ C≡CCH ₃	н н	0	0
1.0334 CH₃ CH₃	CH ₂ NNN	H F	0	0
1.0335 CH₃ CH₃	CH ₂ N N O	H CI	0	0
1.0336 CH ₃ CH ₃	CH ₂ NNN	н н	0	0
1.0337 CH ₃ CH ₃	CH ₂ O	H F	0	0
1.0338 CH ₃ CH ₃	CH ₂ O	H CI	0	0
1.0339 CH ₃ CH ₃	CH ₂ O	н н	0	0
1.0340 CH₃ CH₃	CH ₂	H F	0	0
1.0341 CH₃ CH₃	CH ₂	H CI	0	0
1.0342 CH ₃ CH ₃	CH ₂	н н	0	0
1.0343 CH ₃ CH ₃	CH ₂ OCH ₂	H F	0	0
1.0344 CH ₃ CH ₃	CH ₂ OCH ₂	H CI	0	0
1.0345 CH₃ CH₃	CH ₂ OCH ₂	н н	0	0

No.	R₁	-	R ₂	Z ₁	R ₃₀	Х	Y		nysical data
1.0346	СН	₃ C	CH ₃	CH ₂ O O	Н	F	0	0	
1.0347	СН	3 (CH ₃	CH,0 0	Н	CI	0	0	
1.0348	СН	l ₃ (CH ₃	CH ₂ O	Н	Н	0	0	
1.0349	Cŀ	l ₃ (CH₃	CH,0 O	Н	F	0	0	
1.0350	CH	l ₃ '	СН₃		Н	CI	0	0	
1.0351	Cł	H ₃	CH₃	CH ₂ O O	н	Н	0	0	
1.0352	cı	Н.	CH.	CH₂OCH₂CH₂OCH₃	Н	F	0	1	
1.0352				CH ₂ OCH ₂ CH ₂ OCH ₃	Н	Н	0	1	
		_		CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	0	1	
				CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	0	1	
1.035		Η	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	F	0	0	
1.035		Н	CH₃	CH₂OCH₂CH₂OCH₃	Н	CI	0	0	
1.035		Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	Н	0	0	
1.035		Н	CH₃	CH2OCH2CH2OCH2CH3	Н	F	0	0	
1.036		Н	СН₃	CH2OCH2CH2OCH2CH3	Н	C	0	0	
1.036	1	Н	CH₃	CH2OCH2CH2OCH2CH3	Н	Н	0	0	
1.036		Н	СН₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	0	0	
1.036	3	Н	CH₃	CH₂N(CH₃)SO₂CH₃	Н	C	0	0	
1.036		Н	CH₃	CH₂N(CH₃)SO₂CH₃	Н	ı H	0	0	
1.036	35	н	СН₃	CH ₂ OCH ₂ Ph	1	l F	0	0	
1.036	66	Н	СН₃	CH ₂ OCH ₂ Ph	H	ı C	1 0	0	
1.036	5 7	Н	СН₃	CH₂OCH₂Ph	F	ł -	0	0	
1.036	38	Н	CH₃	CH₂OCH₂CH₂OH	ŀ	ı F	: 0	0	
1.03	69	Н	CH₃	CH ₂ OCH ₂ CH ₂ OH	ŀ	1 0	;) O	0	
1.03	70	Н	CH₃	CH₂OCH₂CH₂OH	ŀ	1	1 0	0	

No.	R₁	R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0371	Н	CH₃	CH ₂ OCH ₂ CH ₂ CI	Н	F	0	0
1.0372	Н	CH ₃	CH2OCH2CH2 CI	Н	CI	0	0
1.0373	Н	CH ₃	CH2OCH2CH2 CI	Н	Н	0	0
1.0374	Н	CH ₃	CH₂OCH₂CF₃	Н	F	0	0
1.0375	Н	CH ₃	CH ₂ OCH ₂ CF ₃	Н	CI	0	0
1.0376	Н	CH₃	CH₂OCH₂CF₃	Н	Н	0	0
1.0377	Н	CH ₃	CH ₂ OCH ₂ CH=CH ₂	Н	F	Ο	0
1.0378	Н	CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	CI	0	0
1.0379	Н	CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	Н	0	0
1.0380	Н	CH₃	CH ₂ O(CO)CH ₃	Н	F	0	0
1.0381	Н	CH₃	CH ₂ O(CO)CH ₃	Н	CI	0	0
1.0382	Н	CH₃	CH ₂ O(CO)CH ₃	Н	Н	0	0
1.0383	Н	CH ₃	CH ₂ OCH ₂ C≡CH	Н	F	0	0
1.0384	Н	CH₃	CH ₂ OCH ₂ C≡CH	Н	CI	0	0
1.0385	Н	CH₃	CH ₂ OCH ₂ C≡CH	Н	Н	0	0
1.0386	Н	CH₃	CH ₂ OCH ₂ C≡CCH ₃	Н	F	0	0
1.0387	Н	CH₃	CH₂OCH₂C≡CCH₃	Н	CI	0	0
1.0388	в н	CH₃	CH ₂ OCH ₂ C≡CCH ₃	Н	Н	0	0
1.0389	ЭН	CH₃	CH ₂ N N N O	н	F	0	0
1.0390	ЭН	I CH₃	CH ₂ N N N O	Н	CI	0	0
1.039	1 H	H CH₃	CH ₂ N N N O		Н		0
1.039	2 H	H CH₃	CH ₂ O	H	l F	0	0

No.	R₁	R ₂	Z ₁		X	Υ	p Physical data
1.0393	Н	CH₃	CH ₂ OOO	Н	CI	0	0
1.0394	Н	CH₃	CH ₂ O	H	Н	0	0
1.0395	Н	CH₃	CH ₂	Н	F	0	0
1.0396	Н	CH₃	CH ₂	Н	CI	0	0
1.0397	Н	CH₃	CH ₂	Н	Н	0	0
•1.0398	Н	CH₃	CH ₂ OCH ₂	Н	F	0	0
1.0399	Н	CH₃	CH ₂ OCH ₂ OO	Н	CI	0	0
1.0400	Н	CH₃	CH ₂ OCH ₂ OO	Н	Н	0	0
1.0401	Н	CH₃	CH ₂ O	Н	F	0	0
1.0402	Н	CH₃	CH ₂ O	Н	CI	0	0
1.0403	Н	CH ₃	CH ₂ O	Н	Н	0	0
1.0404	Н	CH₃	· CH ₂ O	Н	F	0	0
1.0405	Н	CH₃	CH ₂ O O	Н	Cl	0	0
1.0406	Н	I CH₃	CH ₂ O O	Н	Н	0	0
1.0407	' -	H CH ₃	CH2OCH2CH2OCH3	Н	F	0	1

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Y	. p	Physical data
1.0408	Н	CH₃	CH₂OCH₂CH₂OCH₃	Н	Н	0	1	
1.0409	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	0	1	
1.0410	Н	CH ₃	CH2OCH2CH2OCH2CH3	Н	Н	0	1	
1.0411	Н	Н	CH₂OCH₂CH₂OCH₃	Н	F	CH₂	-	¹ H NMR (300 MHz; CDCl ₃) δ 17.0 (broad s, 1H); 7.62 (s, 2H); 6.47 (m, 1H); 6.35 (m, 1H); 4.73 (m, 2H); 3.50 (m, 3H); 3.39 (m, 2H); 3.31 (s, 3H); 3.30 (m, 1H); 2.72-2.50 (m, 2H).
1.0412	Н	Н	CH₂OCH₂CH₂OCH₃	Н	CI	CH ₂	0	
1.0413	Н	Н	CH₂OCH₂CH₂OCH₃	Н	Н	CH₂	0	
1.0414	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	CH ₂	0	
1.0415	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	CI	CH ₂	0	
1.0416	Н	Н	CH₂OCH₂CH₂OCH₂CH₃	Н	Н	CH₂	0	
1.0417	Н	Н	CH₂N(CH₃)SO₂CH₃	Н	F	CH₂	0	
1.0418	Н	Н	CH₂N(CH₃)SO₂CH₃	Н	CI	CH₂	0	
1.0419	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	CH₂	0	
1.0420	Н	Н	CH₂OCH₂Ph	Н	F	CH₂	0	
1.0421	Н	Н	CH₂OCH₂Ph	Н	CI	CH₂	0	
1.0422	Н	Н	CH₂OCH₂Ph	Н	Н	CH₂	0	
1.0423	Н	Н	CH₂OCH₂CH₂OH	Н	F	CH₂	0	
1.0424	Н	Н	CH2OCH2CH2OH	Н	CI	CH ₂	0	
1.0425	Н	Н	CH ₂ OCH ₂ CH ₂ OH	Н	Н	CH₂	0	
1.0426	Н	Н	CH2OCH2CH2CI	Н	F	CH₂	0	
1.0427	Н	Н	CH₂OCH₂CH₂ CI	Н	CI	CH₂	0	
1.0428	Н	Н	CH₂OCH₂CH₂ CI	Н	Н	CH ₂	0	1
1.0429	Н	Н	CH₂OCH₂CF₃	Н	F	CH ₂	0	
1.0430) H	Н	CH₂OCH₂CF₃	Н	CI	CH₂	0	
1.0431	Н	ı H	CH₂OCH₂CF₃	Н	Н	CH ₂	0	
1.0432	2 H	н	CH ₂ OCH ₂ CH=CH ₂	Н	F	CH ₂	0	
1.0433	3 H	і н	CH₂OCH₂CH=CH₂	Н	CI	CH₂	O)
1.0434	1 H	ı H	CH ₂ OCH ₂ CH=CH ₂	Н	Н	CH ₂	C	
1.0435	5 -	ı H	CH ₂ O(CO)CH ₃	Н	F	CH₂	C)

No.	R₁	R ₂	Z ₁	R ₃₀ X	Υ	p Physical data
1.0436	Н	Н	CH ₂ O(CO)CH ₃	H CI	CH₂	0
1.0437	Н	Н	CH₂O(CO)CH₃	н н	CH₂	0
1.0438	Н	. Н	CH₂OCH₂C≡CH	H F	CH ₂	0
1.0439	Н	Н	CH₂OCH₂C≡CH	H CI	CH₂	0
1.0440	Н	Н	CH₂OCH₂C≡CH	н н	CH ₂	0
1.0441	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	H F	CH ₂	0
1.0442	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	H CI	CH₂	0
1.0443	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	н н	CH₂	0
1.0444	Н	H	CH ₂ NNN	H F	CH₂	0
1.0445	Н	н	CH ₂ N N	H CI	CH₂	0
1.0446	H	н	CH ₂ N N N O	нн	CH₂	0
1.0447	Н	Н	CH ₂ OOO	H F	CH₂	0
1.0448	н	Н	N-N CH ₂ 0	H CI	CH₂	0
1.0449) Н	н	CH ₂ O CH ₂ O CH ₂	нн	CH₂	0
1.0450) Н	Н	CH ₂	H F	CH₂	0
1.045	1 H	Н	CH ₂ O	H CI	CH₂	0
1.045	2 H	Н	CH ₂ O	нн	CH₂	0

No.	R₁	R	2	Z ₁	R ₃₀	Х	Y		ical data
1.0453	Н	Н]	CH ₂ OCH ₂ OO	Н	F	CH₂	0	
1.0454	Н	Н	I	CH ₂ OCH ₂	Н	Cl	CH ₂	0	
1.0455	Н	Н	i	CH ₂ OCH ₂	Н	Н	CH ₂	0	
1.0456	Н	Н	ł	CH ₂ O	Н	F	CH ₂	0	
1.0457	Н	۲	ł	CH ₂ O	Н	CI	CH₂	0	
1.0458	Н	H	1	CH ₂ O	Н	Н	CH ₂	0	
1.0459	н		4	CH ₂ O O	Н	F	CH ₂	0	
1.0460	Н		Н	CH ₂ O O	Н	Cl	CH₂	0	
1.0461	Н	1	Н	CH ₂ O O	Н	Н	CH₂	0	
1.0462	H		Н		Н	F	CH ₂	1	
1.0463	В		Н		Н	Н	CH ₂	1	
1.0464	Н	ì	Н	CH2OCH2CH2OCH2CH3	Н	F	CH ₂	1	
1.0465	5 F	l	Н	CH2OCH2CH2OCH2CH3	Н	Н	CH₂	1	
1.0466	Cł	d₃ C	CH₃	CH₂OCH₂CH₂OCH₃	Н	F	CH ₂	0	1
1.0467	7 CI	⊣ ₃ C	CH ₃	CH₂OCH₂CH₂OCH₃	Н	CI	CH ₂	0	
1.0468	3 CI	⊣ ₃ (CH₃	CH2OCH2CH2OCH3	Н	Н	CH₂	0	
1.0469	e CI	⊣ ₃ (CH₃	CH2OCH2CH2OCH2CH3	, H	F	CH₂	0	
1.047) CI	H ₃ (CH₃	CH2OCH2CH2OCH2CH	, H	CI	CH ₂	0	
1.047	1 C	H ₃ (CH₃	CH₂OCH₂CH₂OCH₂CH	₃ H	Н	CH₂	0	
1.047	2 C	H ₃ (CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	CH₂	0	
1.047	3 C	H ₃ (CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н		CH₂	0	
1.047	4 C	Нз (CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	H	I H	CH₂	0	

No. R ₁ R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.0475 CH ₃ CH ₃	CH ₂ OCH ₂ Ph	Н	F	CH₂	0
1.0476 CH ₃ CH ₃	CH₂OCH₂Ph	Н	Cl	CH₂	0
1.0477 CH ₃ CH ₃	CH₂OCH₂Ph	Н	Н	CH ₂	0
1.0478 CH ₃ CH ₃	CH ₂ OCH ₂ CH ₂ OH	Н	F	CH ₂	0
1.0479 CH ₃ CH ₃	CH₂OCH₂CH₂OH	Н	CI	CH ₂	0
1.0480 CH ₃ CH ₃	CH ₂ OCH ₂ CH ₂ OH	Н	Н	CH ₂	0
1.0481 CH ₃ CH ₃	CH ₂ OCH ₂ CH ₂ CI	Н	F	CH ₂	0
1.0482 CH ₃ CH ₃	CH₂OCH₂CH₂ CI	Н	CI	CH₂	0
1.0483 CH ₃ CH ₃	CH₂OCH₂CH₂ CI	Н	Н	CH₂	0
1.0484 CH ₃ CH ₃	CH₂OCH₂CF₃	Н	F	CH ₂	0
1.0485 CH ₃ CH ₃	CH₂OCH₂CF₃	Н	CI	CH₂	0
1.0486 CH ₃ CH ₃	CH₂OCH₂CF₃	Н	Н	CH ₂	0
1.0487 CH ₃ CH ₃	CH ₂ OCH ₂ CH=CH ₂	Н	F	CH ₂	0
1.0488 CH ₃ CH ₃	CH₂OCH₂CH=CH₂	Н	Cl	CH ₂	0
1.0489 CH ₃ CH ₃	CH ₂ OCH ₂ CH=CH ₂	Н	Н	CH ₂	0
1.0490 CH ₃ CH ₃	CH₂O(CO)CH₃	Н	F	CH ₂	0 .
1.0491 CH ₃ CH ₃	CH₂O(CO)CH₃	Н	CI	CH₂	0
1.0492 CH ₃ CH ₃	CH₂O(CO)CH₃	Н	Н	CH ₂	. 0
1.0493 CH ₃ CH ₃	CH₂OCH₂C≡CH	Н	F	CH ₂	0
1.0494 CH ₃ CH ₃	CH₂OCH₂C≡CH	Н	CI	CH₂	0
1.0495 CH ₃ CH ₃	CH ₂ OCH ₂ C≡CH	Н	Н	CH₂	0
1.0496 CH ₃ CH ₃	CH₂OCH₂C≡CCH₃	Н	F	CH ₂	0
1.0497 CH ₃ CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	CH ₂	0
1.0498 CH ₃ CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	Н	CH₂	0
1.0499 CH₃ CH₃	CH ₂ N N N N N N N N N N N N N N N N N N N	Н	F	CH₂	0
1.0500 CH₃ CH₃	CH ₂ N N O	H 	Cl	CH₂	0

No. R ₁ R ₂	Z ₁	R ₃₀ X	Y	p Physical data
1.0501 CH ₃ CH ₃	CH ₂ NNN	нн	CH₂	0
1.0502 CH ₃ CH ₃	CH ₂ O O	H F	CH₂	0
1.0503 CH ₃ CH ₃	CH ₂ O O	H CI	CH₂	0
1.0504 CH₃ CH₃	CH ₂ OOO	н н	CH₂	0
1.0505 CH ₃ CH ₃	CH ₂	H F	CH₂	0
1.0506 CH ₃ CH ₃	CH ₂	H CI	CH₂	0
1.0507 CH ₃ CH ₃	CH ₂	н н	CH₂	0
1.0508 CH ₃ CH ₃	CH ₂ OCH ₂ OO	H, F	CH₂	0
1.0509 CH₃ CH₃	CH ₂ OCH ₂ OO	H CI	CH ₂	0
1.0510 CH ₃ CH ₃	CH ₂ OCH ₂	н н	CH₂	0
1.0511 CH ₃ CH ₃	CH ₂ O	H F	CH ₂	0
1.0512 CH ₃ CH ₃	CH ₂ O	H CI	CH₂	0
1.0513 CH ₃ CH ₃	CH₂O O	н н	CH₂	0
1.0514 CH ₃ CH ₃	CH ₂ O O	H F	CH₂	0

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.0515	CH₃	CH₃	CH ₂ O O	Н	CI	CH₂	0
1.0516	CH ₃	CH₃	CH ₂ O O	Н	Н	CH₂	0
1.0517	CH ₃	CH₃	CH₂OCH₂CH₂OCH₃	Н	F	CH₂	1
1.0518	СН₃	CH₃	CH₂OCH₂CH₂OCH₃	Н	Н	CH₂	1
1.0519	СН₃	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	CH₂	1
1.0520	CH₃	СН₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	CH ₂	1
1.0521	Н	CH₃	CH₂OCH₂CH₂OCH₃	Н	F	CH₂	0
1.0522	Н	СН₃	CH₂OCH₂CH₂OCH₃	Н	CI	CH ₂	0
1.0523	Н	СН₃	CH₂OCH₂CH₂OCH₃	Н	Н	CH ₂	0
1.0524	Н	СН₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	CH ₂	0
1.0525	Н	CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	CI	CH ₂	0
1.0526	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	CH ₂	0
1.0527	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	CH ₂	0
1.0528	Н	СН₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	CI	CH₂	0
1.0529	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	CH ₂	0
1.0530	Н	CH₃	CH₂OCH₂Ph	Н	F	CH ₂	0
1.0531	Н	CH₃	CH₂OCH₂Ph	• н	CI	CH ₂	0
1.0532	2 H	CH₃	CH₂OCH₂Ph	Н	Н	CH ₂	0
1.0533	в н	CH₃	CH₂OCH₂CH₂OH	Н	F	CH₂	0
1.0534	н	СН₃	CH₂OCH₂CH₂OH	Н	CI	CH ₂	0
1.0535	5 H	CH₃	CH ₂ OCH ₂ CH ₂ OH	Н	Н	CH ₂	0
1.0536	6 H	CH ₃	CH2OCH2CH2CI	Н	F	CH ₂	0
1.0537	7 H	CH	CH2OCH2CH2 CI	Н	CI	CH ₂	0
1.0538	в н	CH	CH ₂ OCH ₂ CH ₂ CI	Н	Н	CH ₂	0
1.053	9 H	CH:	CH ₂ OCH ₂ CF ₃	Н	F	CH₂	0
1.054	0 Н	CH:	CH ₂ OCH ₂ CF ₃	Н	CI	CH ₂	0
1.054	1 H	CH:	CH ₂ OCH ₂ CF ₃	Н	Н	CH ₂	0
1.054	2 H	CH	3 CH ₂ OCH ₂ CH=CH ₂	Н	F	CH ₂	0
1.054	3 H	CH:	3 CH₂OCH₂CH=CH2	Н	CI	CH₂	0

No. R ₁ R ₂	Z ₁	R ₃₀ X	Υ	p Physical data	
1.0544 H CH ₃	CH₂OCH₂CH=CH₂	н н	CH₂	0	_
1.0545 H CH₃	CH ₂ O(CO)CH ₃	H F	CH₂	0	
1.0546 H CH ₃	CH₂O(CO)CH₃	H CI	CH₂	0	
1.0547 H CH ₃	CH₂O(CO)CH₃	н н	CH₂	0	
1.0548HCH ₃ _	CH₂OCH₂C≣CH	HF	CH₂	0	
1.0549 H CH₃	CH₂OCH₂C≡CH	H CI	CH₂	0	
1.0550 H CH ₃	CH ₂ OCH ₂ C≡CH	н н	CH₂	0	
1.0551 H CH ₃	CH ₂ OCH ₂ C≡CCH ₃	H F	CH₂	0	
1.0552 H CH ₃	CH ₂ OCH ₂ C≡CCH ₃	H CI	CH ₂	0	
1.0553 H CH₃	CH ₂ OCH ₂ C≡CCH ₃	н н	CH ₂	0	
1.0554 H CH ₃	FN	H.F	CH ₂	0	
	CH ₂ N N				
1.0555 H CH₃	N N-	H CI	CH₂	0	
	CH ₂ /N				
1.0556 H CH ₃	N-N-	н н	CH₂	0	
	CH ₂ /N				
1.0557 H CH₃	N N	H F	CH₂	0	
	CH ₂ OOO				
1.0558 H CH₃	./	н с	I CH₂	0	
	CH O O				
1.0559 H CH₃	CH ₂ O	н н	I CH₂	0	
	N-IN				
	CH ₂ O				
1.0560 H CH₃	CH ₂ O	H F	CH ₂	0	
1.0561 H CH ₃	CH ₂	н с	CH ₂	0	
	0			v	

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0562	Н	CH ₃	CH ₂	Н	Н	CH₂	0
1.0563	Н	CH ₃	CH ₂ OCH ₂	Н	F	CH₂	0
1.0564	Н	CH ₃	CH ₂ OCH ₂	Н	CI	CH ₂	0
1.0565	Н	CH₃	CH ₂ OCH ₂	Н	Н	CH₂	0
1.0566	Н	CH₃	CH ₂ O	Н	F	CH ₂	0
1.0567	Н	CH₃	CH₂O O	Н	CI	CH₂	0
1.0568	Н	CH₃	CH₂O O	Н	Н	CH ₂	0 .
1.0569	Н	CH₃	CH ₂ O O	Н	F	CH₂	0
1.0570	н	CH ₃	CH ₂ O O	Н	CI	CH₂	0
1.0571	Н	СН₃	CH ₂ O O	Н	Н	CH₂	0
1.0572	Н	CH₃		Н	F	CH₂	1
1.0573	Н	CH₃	CH₂OCH₂CH₂OCH₃	Н	Н	CH ₂	1
1.0574	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	CH ₂	1
1.0575	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	CH₂	1
1.0576	Н	Н		Н	F	CH₂CH₂	0 resin
1.0577	Н	Н	CH₂OCH₂CH₂OCH₃	Н	CI	CH₂CH₂	0
1.0578	3 H	Н		Н	Н	CH ₂ CH ₂	0
1.0579) H	Н	CH2OCH2CH2OCH2CH3			CH₂CH₂	0
1.0580			CH2OCH2CH2OCH2CH3			CH₂CH₂	0
1.0581			CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃			CH₂CH₂	0
1.0582	2 F	н н	CH₂N(CH₃)SO₂CH₃	Н	F	CH₂CH₂	0 .

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0583	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	CI	CH₂CH₂	0
1.0584	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	CH₂CH₂	0
1.0585	Н	Н	CH₂OCH₂Ph	Н	F	CH₂CH₂	0
1.0586	Н	Н	CH ₂ OCH ₂ Ph	Н	CI	CH₂CH₂	0
1.0587	H	-H:	CH ₂ OCH ₂ Ph	Н	. H .	CH₂CH₂	0
1.0588	Н	Н	CH ₂ OCH ₂ CH ₂ OH	Н	F	CH₂CH₂	0
1.0589	Н	Н	CH ₂ OCH ₂ CH ₂ OH	Н	CI	CH₂CH₂	0
1.0590	Н	Н	CH ₂ OCH ₂ CH ₂ OH	Н	Н	CH₂CH₂	0
1.0591	Н	Н	CH ₂ OCH ₂ CH ₂ CI	Н	F	CH₂CH₂	0
1,0592	Н	Н	CH2OCH2CH2 CI	Н	Cl	CH₂CH₂	0
1.0593	Н	Н	CH2OCH2CH2 CI	Н	Н	CH ₂ CH ₂	0
1.0594	Н	Н	CH ₂ OCH ₂ CF ₃	Н	F	CH ₂ CH ₂	0
1.0595	Н	Н	CH ₂ OCH ₂ CF ₃	Н	CI	CH ₂ CH ₂	0
1.0596	Н	Н	CH ₂ OCH ₂ CF ₃	Н	Н	CH₂CH₂	0
1.0597	Н	Н	CH ₂ OCH ₂ CH=CH ₂	Н	F	CH₂CH₂	0
1.0598	Н	Н	CH ₂ OCH ₂ CH=CH ₂	Н	CI	CH₂CH₂	0
1.0599	Н	Н	CH ₂ OCH ₂ CH=CH ₂	Н	Н	CH₂CH₂	0
1.0600	Н	Н	CH₂O(CO)CH₃	Н	F	CH ₂ CH ₂	0
1.0601	Н	Н	CH₂O(CO)CH₃	Н	CI	CH₂CH₂	0
1.0602	: H	Н	CH₂O(CO)CH₃	Н	Н	CH₂CH₂	0
1.0603	В	Н	CH ₂ OCH ₂ C≡CH	Н	F	CH ₂ CH ₂	0
1.0604	Н	Н	CH ₂ OCH ₂ C≡CH	Н	CI	CH₂CH₂	0
1.0605	5 H	Н	CH ₂ OCH ₂ C≡CH	H	Н	CH₂CH₂	0
1.0606	6 H	Н	CH₂OCH₂C≡CCH₃	Н	F	CH₂CH₂	0
1.0607	7 H	Н	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	CH₂CH₂	0
1.0608	3 H	Н	CH₂OCH₂C≡CCH₃	Н	Н	CH₂CH₂	0
1.0609	9 H	Н	CH ₂ N N	Н	F	CH₂CH₂	0
1.0610	0 H	Н	CH ₂ NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN	н	CI	CH₂CH₂	0

No.	R₁	R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0611	Н	Н	CH ₂ N N	Н	Н	CH₂CH₂	0
1.0612	Н	H 	CH ₂ O O	Н	F .	CH ₂ CH ₂	0
1.0613	Н	н	CH ₂ O	Н	CI	CH₂CH₂	0
1.0614	Н	Н	CH ₂ OOO	Н	Н	CH₂CH₂	0
1.0615	н	н	CH ₂	Н	F	CH ₂ CH ₂	0
1.0616	Н	н	CH ₂	Н	CI	CH₂CH₂	0
1.0617	Н	Н	CH ₂	Н	Н	CH₂CH₂	0
1.0618	Н	Н	CH ₂ OCH ₂	Н	F	CH₂CH₂	0
1.0619	Н	Н	CH ₂ OCH ₂	Н	CI	CH₂CH₂	0
1.0620	Н	Н	CH ₂ OCH ₂ OO	Н	Н	CH₂CH₂	0
1.0621	Н	Н	CH ₂ O O	Н	F	CH₂CH₂	0
1.0622	: Н	Н	CH₂O O	н	CI	CH ₂ CH ₂	0
1.0623	в н	Н	CH ₂ O O	Н	Н	CH₂CH₂	0
1.0624	H	Н	CH ₂ O O	н	F	CH₂CH₂	0

No.	R₁	R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0625	Н	Н		Н	CI	CH₂CH₂	0
			CH ₂ O				
1.0626	Н	Н		Н	Н	CH₂CH₂	0
			CH ₂ O				
1.0627	Н	Н	CH2OCH2CH2OCH3	Н	F	CH₂CH₂	1
1.0628	Н	Н	CH₂OCH₂CH₂OCH₃	Н	Н	CH ₂ CH ₂	1
1.0629	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	CH ₂ CH ₂	1
1.0630	Н	Н	CH₂OCH₂CH₂OCH₂CH₃	Н	Н	CH ₂ CH ₂	1
1.0631	CH ₃	CH₃	CH2OCH2CH2OCH3	Н	F	CH ₂ CH ₂	0
1.0632	CH ₃	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	CI	CH ₂ CH ₂	0
1.0633	СН₃	СН₃	CH2OCH2CH2OCH3	Н	Н	CH₂CH₂	0
1.0634	CH₃	CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	CH ₂ CH ₂	0
1.0635	CH ₃	СН₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	CI	CH ₂ CH ₂	0
1.0636	CH₃	CH ₃	CH2OCH2CH2OCH2CH3	Н	Н	CH₂CH₂	0
1.0637	CH ₃	CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	CH ₂ CH ₂	0
1.0638	CH₃	CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	CI	CH ₂ CH ₂	0
1.0639	CH₃	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	CH ₂ CH ₂	0
1.0640	CH₃	CH₃	CH₂OCH₂Ph	Н	F	CH₂CH₂	0
1.0641	CH₃	CH ₃	CH₂OCH₂Ph	Н	CI	CH₂CH₂	0
1.0642	CH₃	CH₃	CH₂OCH₂Ph	Н	Н	CH₂CH₂	0
1.0643	CH₃	CH₃	CH2OCH2CH2OH	Н	F	CH₂CH₂	0
1.0644	CH₃	CH₃	CH₂OCH₂CH₂OH	Н	CI	CH₂CH₂	0
1.0645	5 CH₃	CH₃	CH₂OCH₂CH₂OH	Н	Н	CH ₂ CH ₂	0
1.0646	6 CH ₃	CH₃	CH2OCH2CH2CI	Н	F	CH₂CH₂	0
1.0647	7 CH ₃	CH₃	CH2OCH2CH2 CI	Н	CI	CH ₂ CH ₂	0
1.0648	3 CH ₃	CH ₃	CH2OCH2CH2 CI	Н	Н	CH₂CH₂	0
1.0649	OH:	CH ₃	CH ₂ OCH ₂ CF ₃	Н	F	CH ₂ CH ₂	0 .
1.065	CH:	CH ₃	CH ₂ OCH ₂ CF ₃	Н	CI	CH ₂ CH ₂	0
1.065	1 CH:	CH:	CH ₂ OCH ₂ CF ₃	Н	Н	CH ₂ CH ₂	0
1.065	2 CH:	CH:	CH ₂ OCH ₂ CH=CH ₂	Н	F	CH₂CH₂	0
1.065	3 CH:	CH:	CH2OCH2CH=CH2	Н	CI	CH₂CH₂	0

No. R ₁ R ₂	Z ₁	R ₃₀	X	Υ	p Physical data
1.0654 CH ₃ CH ₃	CH ₂ OCH ₂ CH=CH ₂	Н	Н	CH ₂ CH ₂	0
1.0655 CH ₃ CH ₃	CH₂O(CO)CH₃	Н	F	CH₂CH₂	0
1.0656 CH ₃ CH ₃	CH ₂ O(CO)CH ₃	Н	CI	CH₂CH₂	0
1.0657 CH₃ CH₃	CH₂O(CO)CH₃	Н	Н	CH₂CH₂	0
1.0658 CH ₃ CH ₃	CH ₂ OCH ₂ C≡CH	н	F	CH₂CH₂	0
1.0659 CH ₃ CH ₃	CH₂OCH₂C≡CH	Н	CI	CH₂CH₂	0
1.0660 CH ₃ CH ₃	CH ₂ OCH ₂ C≡CH	Н	Н	CH₂CH₂	0
1.0661 CH₃ CH₃	CH ₂ OCH ₂ C≡CCH ₃	Н	F	CH₂CH₂	0
1.0662 CH ₃ CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	CH₂CH₂	0
1.0663 CH ₃ CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	Н	CH ₂ CH ₂	0
1.0664 CH₃ CH₃	EN.	Н	F	CH₂CH₂	0
	CH ₂ N N				
1.0665 CH ₃ CH ₃	CH ₂ N N	Н	CI	CH₂CH₂	0
1.0666 CH ₃ CH ₃	CH ₂ NNN	Н	Н	CH₂CH₂	0
1.0667 CH ₃ CH ₃	CH ₂ O	н	F	CH₂CH₂	0
1.0668 CH₃ CH₃	CH ₃ O	Н	CI	CH₂CH₂	0
1.0669 CH ₃ CH ₃	CH ₂ O	Н	Н	CH₂CH₂	0
1.0670 CH ₃ CH ₃	CH ₂	Н	F	CH₂CH₂	0
1.0671 CH₃ CH₃	CH ₂	Н	CI	CH₂CH₂	0

No.	R	ı	R₂	Z ₁	R ₃₀	X	Υ	p Physical	data
1.0672	Cŀ	l ₃ (CH ₃	CH ₂	Н	Н	CH₂CH₂	0	
1.0673	Cŀ	l ₃ (CH₃	CH ₂ OCH ₂	Н	F	CH₂CH₂	0	
1.0674	CH	ł ₃ (CH₃	CH ₂ OCH ₂	Н	CI	CH₂CH₂	0	
1.0675	CH	l ₃ (CH₃	CH ₂ OCH ₂	Н	н	CH₂CH₂	0	
1.0676	Cł	d₃ (CH₃	CH,O O	Н	F	CH₂CH₂	. 0	
1.0677	Cł	H ₃ (СН₃	сн,о	Н	CI	CH ₂ CH ₂	0	
1.0678	Cl	H ₃ (CH₃	сн,о СО	Н	Н	CH₂CH₂	0	
1.0679	CI	Нз	CH₃	CH,O O	H	F	CH₂CH₂	0	
1.0680	C	Н₃	СН₃	CH ₂ O O	н	CI	CH₂CH₂	0	
1.068	ı C	Нз	CH₃	CH ₂ O O	Н	Н	CH₂CH₂	0	
1.0682	2 C	Ηα	CH ₃	CH2OCH2CH2OCH3	Н	F	CH₂CH₂	1	
1.068		-	_	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	Н	CH ₂ CH ₂	1	
1.068	4 C	Нз	CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CI	վ ₃ Η	F	CH₂CH₂	1	
			•	CH ₂ OCH ₂ CH ₂ OCH ₂ CI		Н	CH₂CH₂	1	
1.068	6	Н	СН₃	CH2OCH2CH2OCH3	Н	F	CH₂CH₂	0	
1.068	7	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	CI	CH ₂ CH ₂	0	
1.068	8	Н	СН3	CH2OCH2CH2OCH3	Н	Н	CH ₂ CH ₂	0	
1.068	9	Н	CH ₃	CH2OCH2CH2OCH2C	Н₃ Н	F	CH₂CH₂	0	
1.069	0	Н	CH ₃	CH2OCH2CH2OCH2C	H ₃ H	CI	CH ₂ CH ₂	0	
1.069	1	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ C	H₃ H	Н	CH ₂ CH ₂	0	
1.069	2	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	CH ₂ CH ₂	0	

No.	R₁	R ₂	Z ₁	R ₃₀	X	Υ	p Physical data
1.0693	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	CI	CH₂CH₂	0
1.0694	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	CH₂CH₂	0
1.0695	Н	CH₃	CH ₂ OCH ₂ Ph	Н	F	CH₂CH₂	0
1.0696	Н	CH₃	CH₂OCH₂Ph	Н	CI	CH₂CH₂	0
1.0697	Н	CH₃	CH₂OCH₂Ph	Н	Н	CH₂CH₂	0
1.0698	Н	CH₃	CH ₂ OCH ₂ CH ₂ OH	Н	F	CH₂CH₂	0
1.0699	Н	CH₃	CH2OCH2CH2OH	Н	CI	CH₂CH₂	0
1.0700	Н	CH₃	CH₂OCH₂CH₂OH	Н	Н	CH₂CH₂	0
1.0701	Н	CH₃	CH ₂ OCH ₂ CH ₂ Cl	Н	F	CH₂CH₂	0
1.0702	Н	CH₃	CH ₂ OCH ₂ CH ₂ CI	Н	CI	CH₂CH₂	0
1.0703	Н	CH₃	CH2OCH2CH2 CI	Н	Н	CH₂CH₂	0
1.0704	Н	CH ₃	CH ₂ OCH ₂ CF ₃	Н	F	CH ₂ CH ₂	0
1.0705	Н	CH₃	CH ₂ OCH ₂ CF ₃	Н	CI	CH₂CH₂	0
1.0706	Н	CH₃	CH₂OCH₂CF₃	Н	Н	CH ₂ CH ₂	0
1.0707	Н	CH ₃	CH ₂ OCH ₂ CH=CH ₂	Н	F	CH ₂ CH ₂	0
1.0708	Н	CH ₃	CH ₂ OCH ₂ CH=CH ₂	Н	CI	CH₂CH₂	o .
1.0709	Н	CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	Н	CH₂CH₂	0
1.0710	Н	CH₃	CH ₂ O(CO)CH ₃	Н	F	CH₂CH₂	0
1.0711	Н	CH₃	CH ₂ O(CO)CH ₃	Н	CI	CH₂CH₂	0
1.0712	Н	CH₃	CH ₂ O(CO)CH ₃	Н	Н	CH ₂ CH ₂	0
1.0713	Н	CH₃	CH ₂ OCH ₂ C≡CH	Н	F	CH₂CH₂	0
1.0714	Н	CH₃	CH ₂ OCH ₂ C≡CH	Н	CI	CH₂CH₂	0
1.0715	Н	CH₃	CH ₂ OCH ₂ C≡CH	Н	Н	CH₂CH₂	0
1.0716	Н	CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	F	CH₂CH₂	0
1.0717	Н	CH₃	CH₂OCH₂C≡CCH₃	Н	CI	CH₂CH₂	0
1.0718	В	CH₃	CH₂OCH₂C≣CCH₃	Н	H	CH₂CH₂	0
1.0719) H	I CH₃	CH ₂ NNNN	Н	F	CH₂CH₂	0
1.0720) H	I CH₃	CH ₂ N N	Н	Cl	CH₂CH₂	0

No. R ₁ R	Z ₂ Z ₁	R ₃₀	X	Υ	p Physical data
1.0721 H C	CH ₂ N N	Н	Н	CH₂CH₂	0
1.0722 H C	H_3 CH_2 O O	H 	F	CH₂CH₂	0
1.0723 H C	H ₃	Н	CI	CH₂CH₂	0
1.0724 H C	H ₃	Н	Н	CH ₂ CH ₂	0
1.0725 H C	CH ₂ O	Н	F	CH₂CH₂	0
1.0726 H C	CH₃ CH₂ O	Н	CI	CH₂CH₂	0
1.0727 H C	CH ₃ CH ₂ O	Н	Н	CH ₂ CH ₂	0
1.0728 H (CH ₃ CH ₂ OCH ₂	H	F	CH ₂ CH ₂	0
1.0729 H (`ó	Н	CI	CH₂CH₂	0
1.0730 H (Ò.	Н	H	CH₂CH₂	0
1.0731 H	CH ₂ O	Н	F	CH₂CH₂ [·]	0
1.0732 H		Н	CI	CH₂CH₂	0
1.0733 H	CH₃ CH₂O	Н	Н	CH₂CH₂	0
1.0734 H	CH ₂ O O	н	F	CH₂CH₂	0

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.0735	Н	CH₃		Н	CI	CH ₂ CH ₂	0 .
			CH ₂ O				
1.0736	Н	СН₃		Н	Н	CH ₂ CH ₂	0
1.0730	• •	O1 13		• •	• •	01120112	-
			CH₂O′ ✓				
1.0737	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	F	CH₂CH₂	1
1.0738	Н	CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	Н	CH₂CH₂	1
1.0739	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	CH₂CH₂	1
1.0740	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	CH₂CH₂	1
1.0741	Н	CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	CI	CH₂CH₂	1
1.0742	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	F	NC(O)C(CH ₃) ₃	0
1.0743	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	CI	$NC(O)C(CH_3)_3$	0
1.0744	Н	Н	CH2OCH2CH2OCH3	Н	Н	$NC(O)C(CH_3)_3$	0
1.0745	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0746	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	CI	$NC(O)C(CH_3)_3$	0 .
1.0747	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	$NC(O)C(CH_3)_3$	0
1.0748	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	NC(O)C(CH ₃) ₃	0
1.0749	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	CI	NC(O)C(CH ₃) ₃	0
1.0750	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	NC(O)C(CH ₃) ₃	0
1.0751	Н	Н	CH₂OCH₂Ph	Н	F	NC(O)C(CH ₃) ₃	0
1.0752	Н	Н	CH₂OCH₂Ph	H	CI	$NC(O)C(CH_3)_3$	0
1.0753	Н	Н	CH₂OCH₂Ph	Н	Н	$NC(O)C(CH_3)_3$	0
1.0754	Н	Н	CH2OCH2CH2OH	Н	F	NC(O)C(CH ₃) ₃	0
1.0755	Н	Н	CH ₂ OCH ₂ CH ₂ OH	Н	CI	NC(O)C(CH ₃) ₃	0
1.0756	Н	Н	CH ₂ OCH ₂ CH ₂ OH	Н	Н	$NC(O)C(CH_3)_3$	0
1.0757	Н	Н	CH ₂ OCH ₂ CH ₂ CI	Н	F	$NC(O)C(CH_3)_3$	0
1.0758	Н	Н	CH₂OCH₂CH₂ CI	Н	CI	$NC(O)C(CH_3)_3$	0
1.0759	Н	н	CH2OCH2CH2 CI	Н	Н	NC(O)C(CH ₃) ₃	0
1.0760	H	н	CH ₂ OCH ₂ CF ₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0761	Н	і н	CH ₂ OCH ₂ CF ₃	Н	CI	$NC(O)C(CH_3)_3$	0
1.0762	: H	н н	CH ₂ OCH ₂ CF ₃	Н	Н	$NC(O)C(CH_3)_3$	0
1.0763	3 -	ı H	CH ₂ OCH ₂ CH=CH ₂	Н	F	NC(O)C(CH ₃) ₃	0

No.	R₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.0764	Н	Н	CH ₂ OCH ₂ CH=CH ₂	Н	CI	NC(O)C(CH ₃) ₃	0
1.0765	Н	Н	CH ₂ OCH ₂ CH=CH ₂	Н	Н	$NC(O)C(CH_3)_3$	0
1.0766	Н	Н	CH ₂ O(CO)CH ₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0767	Н	Н	CH ₂ O(CO)CH ₃	Н	CI	$NC(O)C(CH_3)_3$	0
1.0768	<u>H</u>	Н	CH ₂ O(CO)CH ₃	Н	Η	NC(O)C(CH ₃) ₃	0
1.0769	Н	Н	CH₂OCH₂C≡CH	Н	F	$NC(O)C(CH_3)_3$	0
1.0770	Н	Н	CH ₂ OCH ₂ C≡CH	Н	CI	$NC(O)C(CH_3)_3$	0
1.0771	Н	Н	CH₂OCH₂C≡CH	Н	Н	$NC(O)C(CH_3)_3$	0
1.0772	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0773	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	$NC(O)C(CH_3)_3$	0
1.0774	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	Н	Н	$NC(O)C(CH_3)_3$	0
1.0775	Н	Н	CH ₂ N N	Н	F	NC(O)C(CH ₃) ₃	0
1.0776	н	Н	CH ₂ N N N	н	CI	NC(O)C(CH ₃) ₃	0
1.0777	Н	Н	CH ₂ N N N	Н	Н	NC(O)C(CH ₃) ₃	0
1.0778	в Н	Н	CH ₂ O	Н	F	NC(O)C(CH₃)₃	0
1.0779	э н	Н	CH ₂ O	Н	CI	NC(O)C(CH₃)₃	0
1.078	о н	Н	CH ₂ O O	н	Н	NC(O)C(CH₃)₃	0
1.078	1 H	Н	CH ₂	Н	F	NC(O)C(CH₃)₃	0

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0782	Н	Н	CH ₂	H	CI	NC(O)C(CH ₃) ₃	0
1.0783	Н	Н	CH ₂	Н	Н	NC(O)C(CH ₃) ₃	0
1.0784	H	H	CH ₂ OCH ₂	H	F	NC(O)C(CH ₃) ₃	0
1.0785	Н	H	CH ₂ OCH ₂	Н	CI	NC(O)C(CH ₃) ₃	0
1.0786	н	Н	CH ₂ OCH ₂	Ή	Н	NC(O)C(CH ₃) ₃	0
1.0787	Н	Н	CH ₂ O O	Н	F	NC(O)C(CH ₃) ₃	0
1.0788	н	Н	CH ₂ O	Н	CI	NC(O)C(CH ₃) ₃	0
1.0789	н	н	CH ₂ O	Н	Н	NC(O)C(CH ₃) ₃	0
1.0790	Н	Н	CH₂O CH₂O	Н	F	NC(O)C(CH ₃) ₃	0
1.0791	Н	Н	CH ₂ O O	Н	CI	NC(O)C(CH ₃) ₃	0
1.0792	Н	н	CH ₂ O O	Н	Н	NC(O)C(CH ₃) ₃	0
1.0793	Н	н	CH₂OCH₂CH₂OCH₃	Н	F	$NC(O)C(CH_3)_3$	1
1.0794	Н	н	CH₂OCH₂CH₂OCH₃	Н	Н	$NC(O)C(CH_3)_3$	1
1.0795	Н	Н	CH2OCH2CH2OCH2CH3	Н	F	NC(O)C(CH ₃) ₃	1
1.0796	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	$NC(O)C(CH_3)_3$	1
1.0797	CH₃	CH ₃		Н	F	$NC(O)C(CH_3)_3$	0
1.0798	CH₃	CH ₃		Н	CI	$NC(O)C(CH_3)_3$	0
1.0799	CH₃	CH ₃		Н	Н	NC(O)C(CH ₃) ₃	0
		_	CH2OCH2CH2OCH2CH3			NC(O)C(CH ₃) ₃	0
1.0801	CH	, CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	H	Cl	NC(O)C(CH ₃) ₃	0

	R₁	R ₂	Z ₁	R ₃₀	X	Y	p Physical data
1.0802	CH₃	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	NC(O)C(CH ₃) ₃	0
1.0803	CH₃	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	NC(O)C(CH ₃) ₃	0
1.0804	CH₃	CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	CI	NC(O)C(CH ₃) ₃	0
1.0805	CH₃	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	H	NC(O)C(CH ₃) ₃	0
1.0806	CH₃_	CH₃	CH₂OCH₂Ph	ŀН	F	NC(O)C(CH ₃) ₃	0
1.0807	CH₃	CH ₃	CH₂OCH₂Ph	Н	CI	$NC(O)C(CH_3)_3$	0
1.0808	CH₃	CH ₃	CH₂OCH₂Ph	Н	Н	$NC(O)C(CH_3)_3$	0
1.0809	CH₃	CH₃	CH₂OCH₂CH₂OH	Н	F	$NC(O)C(CH_3)_3$	0
1.0810	CH₃	CH ₃	CH₂OCH₂CH₂OH	Н	CI	$NC(O)C(CH_3)_3$	0
1.0811	CH₃	CH ₃	CH₂OCH₂CH₂OH	Н	Н	$NC(O)C(CH_3)_3$	0
1.0812	CH₃	СНз	CH₂OCH₂CH₂CI	Н	F	$NC(O)C(CH_3)_3$	0
1.0813	CH₃	CH ₃	CH₂OCH₂CH₂ CI	Н	CI	$NC(O)C(CH_3)_3$	0
1.0814	CH ₃	CH ₃	CH₂OCH₂CH₂ CI	Н	Н	$NC(O)C(CH_3)_3$	0
1.0815	CH₃	CH ₃	CH₂OCH₂CF₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0816	CH₃	CH₃	CH₂OCH₂CF₃	Н	CI	$NC(O)C(CH_3)_3$	0
1.0817	CH₃	СН₃	CH₂OCH₂CF₃	Н	Н	$NC(O)C(CH_3)_3$	0
1.0818	CH ₃	CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	F	NC(O)C(CH ₃) ₃	0 .
1.0819	CH ₃	CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	CI	$NC(O)C(CH_3)_3$	0
1.0820	CH₃	CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	Н	$NC(O)C(CH_3)_3$	0
1.0821	CH₃	CH₃	CH₂O(CO)CH₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0822	CH₃	CH₃	CH₂O(CO)CH₃	Н	CI	$NC(O)C(CH_3)_3$	0
1.0823	CH ₃	CH	CH₂O(CO)CH₃	Н	Н	$NC(O)C(CH_3)_3$	0
1.0824	CH₃	CH	CH ₂ OCH ₂ C≡CH	Н	F	$NC(O)C(CH_3)_3$	0
1.0825	CH₃	CH	CH ₂ OCH ₂ C≡CH	Н	CI	$NC(O)C(CH_3)_3$	0
1.0826	CH₃	CH	CH₂OCH₂C≡CH	Н	Н	$NC(O)C(CH_3)_3$	0
1.0827	CH₃	CH	GH ₂ OCH ₂ C≡CCH ₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0828	CH ₃	CH:	3 CH ₂ OCH ₂ C≡CCH ₃	Н	Cl	NC(O)C(CH ₃) ₃	0
1.0829	CH	CH:	3 CH₂OCH₂C≡CCH₃	Н	Н	NC(O)C(CH ₃) ₃	0
1.0830	CH	3 CH	CH ₂ N N	Н	F	NC(O)C(CH ₃) ₃	0

No. R ₁ R ₂	Z ₁	R ₃₀	X	Υ	p Physical data
1.0831 CH ₃ CH ₃	CH ₂ N N	Н	CI	NC(O)C(CH ₃) ₃	0
1.0832 CH ₃ CH ₃	CH ₂ N N O	Н	H 	NC(O)C(CH ₃) ₃	0
1.0833 CH₃ CH₃	CH ₂ O O	Н	F	NC(O)C(CH ₃) ₃	0
1.0834 CH ₃ CH ₃	CH ₂ O	Н	CI	NC(O)C(CH ₃) ₃	0
1.0835 CH ₃ CH ₃	CH ₂ O	Н	Н	NC(O)C(CH ₃) ₃	0
1.0836 CH ₃ CH ₃	CH ₂	Н	F	NC(O)C(CH ₃) ₃	0
1.0837 CH₃ CH₃	CH ₂ O	Н	CI	NC(O)C(CH ₃) ₃	0
1.0838 CH ₃ CH ₃	CH ₂ O	Н	Н	NC(O)C(CH ₃) ₃	0
1.0839 CH ₃ CH ₃	CH ₂ OCH ₂ OO	Н	F	NC(O)C(CH ₃) ₃	0
1.0840 CH ₃ CH ₃	CH ₂ OCH ₂ OO	Н	CI	NC(O)C(CH ₃) ₃	0
1.0841 CH ₃ CH ₃	CH ₂ OCH ₂ OO	Н	Н	NC(O)C(CH ₃) ₃	0
1.0842 CH ₃ CH ₃	CH₂O CO	Н	F	NC(O)C(CH ₃) ₃	0
1.0843 CH ₃ CH ₃	CH ₂ O	Н	CI	NC(O)C(CH₃)₃	0

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.0844	CH₃	CH₃	CH ₂ O	Н	Н	NC(O)C(CH₃)₃	0
1.0845	CH₃	CH₃	CH ₂ O	Н	F	NC(O)C(CH ₃) ₃	0
1.0846	CH₃	CH₃	CH ₂ O O	H	Cl	NC(O)C(CH ₃) ₃	0
1.0847	CH₃	CH₃	CH₂O O	Н	Н	NC(O)C(CH ₃) ₃	0
1.0848	CH₃	СН₃	CH2OCH2CH2OCH3	Н	F	$NC(O)C(CH_3)_3$	1
1.0849	CH₃	СН₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	Н	NC(O)C(CH ₃) ₃	1
1.0850	CH₃	CH₃	CH2OCH2CH2OCH2CH3	Н	F	$NC(O)C(CH_3)_3$	1
1.0851	CH ₃	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	$NC(O)C(CH_3)_3$	1
1.0852	Н	CH₃	CH₂OCH₂CH₂OCH₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0853	Н	CH₃	CH2OCH2CH2OCH3	Н	CI	NC(O)C(CH ₃) ₃	0
1.0854	Н	CH₃	CH2OCH2CH2OCH3	Н	Н	NC(O)C(CH ₃) ₃	0
1.0855	Н	CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0856	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	CI	$NC(O)C(CH_3)_3$	0
1.0857	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	$NC(O)C(CH_3)_3$	0
1.0858	в	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0859	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	CI	$NC(O)C(CH_3)_3$	0
1.0860) H	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	NC(O)C(CH ₃) ₃	0
1.0861	i H	CH₃	CH₂OCH₂Ph	Н	F	NC(O)C(CH ₃) ₃	0
1.0862	2 H	CH₃	CḤ₂OCH₂Ph	Н	CI	NC(O)C(CH ₃) ₃	0
1.0863	3 H	CH₃	CH₂OCH₂Ph	Н	Н	NC(O)C(CH ₃) ₃	0
1.0864	4 H	CH₃	CH₂OCH₂CH₂OH	Н	F	$NC(O)C(CH_3)_3$	0
1.086	5 H	CH₃	CH ₂ OCH ₂ CH ₂ OH	Н	CI	NC(O)C(CH ₃) ₃	0
1.0866	6 H	CH	3 CH₂OCH₂CH₂OH	Н	Н	$NC(O)C(CH_3)_3$	0
1.086	7 H	CH	3 CH₂OCH₂CH₂CI	Н	F	$NC(O)C(CH_3)_3$	0
1.086	8 H	CH:	CH2OCH2CH2 CI	Н	CI	$NC(O)C(CH_3)_3$	0
1.086	9 H	CH:	3 CH2OCH2CH2 CI	Н	Н	$NC(O)C(CH_3)_3$	0
1.087	0 H	I CH	CH ₂ OCH ₂ CF ₃	Н	F	$NC(O)C(CH_3)_3$	0

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.0871	Н	CH₃	CH₂OCH₂CF₃	Н	CI	NC(O)C(CH ₃) ₃	0
1.0872	Н	CH ₃	CH ₂ OCH ₂ CF ₃	Н	Н	NC(O)C(CH ₃) ₃	0
1.0873	Н	CH ₃	CH₂OCH₂CH=CH₂	Н	F	$NC(O)C(CH_3)_3$	0
1.0874	Н	CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	CI	$NC(O)C(CH_3)_3$	0
1.0875	_ H_	_CH₃_	CH2OCH2CH=CH2	H	H	NC(O)C(CH ₃) ₃	0
1.0876	Н	CH₃	CH ₂ O(CO)CH ₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0877	Н	CH₃	CH ₂ O(CO)CH ₃	Н	CI	$NC(O)C(CH_3)_3$	0
1.0878	Н	CH₃	CH ₂ O(CO)CH ₃	Н	Н	$NC(O)C(CH_3)_3$	0
1.0879	Н	CH₃	CH₂OCH₂C≡CH	Н	F	$NC(O)C(CH_3)_3$	0
1.0880	Н	CH₃	CH ₂ OCH ₂ C≡CH	Н	CI	$NC(O)C(CH_3)_3$	0
1.0881	Н	CH ₃	CH₂OCH₂C≡CH	Н	Н	$NC(O)C(CH_3)_3$	0
1.0882	Н	CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	F	$NC(O)C(CH_3)_3$	0
1.0883	Н	CH₃	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	NC(O)C(CH ₃) ₃	0
1.0884	Н	CH₃	CH ₂ OCH ₂ C≡CCH ₃	Н	Н	$NC(O)C(CH_3)_3$	0
1.0885	Н	CH₃	CH ₂ N N	Н	F	NC(O)C(CH ₃) ₃	0
1.0886	Н	CH₃	CH ₂ N N	Н	CI	NC(O)C(CH ₃) ₃	0
1.0887	Н	CH₃	CH ₂ N N N	Н	Н	NC(O)C(CH ₃) ₃	0
1.0888	в н	CH₃	CH ₂ O	Н	F	NC(O)C(CH₃)₃	0
1.0889	ЭН	CH₃	CH ₂ O	Н	CI	NC(O)C(CH ₃) ₃	0
1.0890	ЭН	I CH₃	CH ₂ O	·H	Н	NC(O)C(CH ₃) ₃	0

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.0891	Н	CH₃	CH ₂	Н	F	NC(O)C(CH ₃) ₃	
1.0892	Н	CH ₃	CH ₂	Н	CI	NC(O)C(CH ₃) ₃	0
1.0893	H	CH₃	CH ₂	Н	_H	NC(O)C(CH ₃) ₃	0
1.0894	Н	CH₃	CH ₂ OCH ₂	Н	F	NC(O)C(CH ₃) ₃	0
1.0895	Н	CH₃	CH ₂ OCH ₂	Н	CI	NC(O)C(CH ₃) ₃	0
1.0896	Н	CH ₃	CH ₂ OCH ₂	Н	Н	NC(O)C(CH ₃) ₃	0
1.0897	Н	CH₃	CH₂O O	Н	F	NC(O)C(CH ₃) ₃	0 .
1.0898	Н	CH ₃	CH ₂ O	Н	CI	NC(O)C(CH ₃) ₃	0
1.0899	Н	CH ₃	CH₂O CO	Н	Н	NC(O)C(CH ₃) ₃	0
1.0900	Н	CH₃	CH₂O O	Н	F	NC(O)C(CH ₃) ₃	0
1.0901	Н	CH₃	CH,O O	Н	CI	NC(O)C(CH ₃) ₃	0
1.0902	Н	CH₃	CH ₂ O O	Н	Н	NC(O)C(CH₃)₃	0 .
1.0903	Н	CH₃	CH₂OCH₂CH₂OCH₃	Н	F	$NC(O)C(CH_3)_3$	1 .
1.0904	Н	CH₃	CH₂OCH₂CH₂OCH₃	Н	Н	$NC(O)C(CH_3)_3$	1
1.0905	Н	CH₃	CH₂OCH₂CH₂OCH₂CH₃	Н	F	NC(O)C(CH ₃) ₃	1
1.0906	Н	CH₃	CH₂OCH₂CH₂OCH₂CH₃	Н	Н	NC(O)C(CH ₃) ₃	1
1.0907	Н	Н	CH ₃	Н	F	$NSO_2N(CH_3)_2$	0
1.0908	Н	Н	CH₃	Н	CI	$NSO_2N(CH_3)_2$	0
1.0909	Н	Н	CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.0910	Н	Н	CH₃	CH₃	F	NSO ₂ N(CH ₃) ₂	0
1.0911	Н	Н	CH₃	CH₃	CI	NSO ₂ N(CH ₃) ₂	0
1.0912	Н	Н	CH₃	CH₃	Н	NSO₂N(CH₃)₂	0
1.0913	Н	Н	CH₂CH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0914_	Н	<u>H</u>	CH ₂ CH₃	H	CI	NSO ₂ N(CH ₃) ₂	0
1.0915	Н	Н	CH₂CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0916	Н	Н	CH₂CH₂CH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0917	Н	Н	CH₂CH₂CH₃	Н	Cl	NSO ₂ N(CH ₃) ₂	0
1.0918	Н	Н	CH₂CH₂CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0919	H	Н	CH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0920	Н	Н	CH₂OCH₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.0921	Н	Н	CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0922	Н	Н	CH₂OCH₂CH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0923	Н	Н	CH₂OCH₂CH₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.0924	Н	Н	CH₂OCH₂CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0.
1.0925	Н	Н	CH2OCH2CH2OCH3	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0926	Н	Н	CH2OCH2CH2OCH3	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.0927	Н	Н	CH₂OCH₂CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0928	Н	Н	CH2OCH2CH2OCH2CH3	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0929	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.0930	Н	Н	CH2OCH2CH2OCH2CH3	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0931	Н	Н	CH ₂ CH ₂ OCH ₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0932	Н	Н	CH₂CH₂OCH₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.0933	Н	Н	CH₂CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0934	Н	Н	CH₂OCH₂C≡CH	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0935	Н	Н	CH₂OCH₂C≡CH	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.0936	Н	Н	CH₂OCH₂C≣CH	Н	Н	$NSO_2N(CH_3)_2$	0
1.0937	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	Н	F	$NSO_2N(CH_3)_2$	0
1.0938	Н	Н	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	$NSO_2N(CH_3)_2$	0
1.0939	Н	Н	CH₂OCH₂C≡CCH₃	Н	Н	NSO₂N(CH₃)₂	0
1.0940	Н	н	CH2CH2CH2OCH3	Н	F	NSO₂N(CH₃)₂	0
1.0941	Н	н	CH ₂ CH ₂ CH ₂ OCH ₃	Н	CI	NSO₂N(CH₃)₂	0
1.0942	2 H	. н	CH₂CH₂CH₂OCH₃	Н	Н	$NSO_2N(CH_3)_2$	0

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.0943	Н	Н	CH₂OCH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0944	Н	Н	CH ₂ OCH ₂ OCH ₃	Н	CI	NSO₂N(CH₃)₂	0
1.0945	Н	Н	CH ₂ OCH ₂ OCH ₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0946	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0947	.Н	_H	CH ₂ N(CH ₃)SO ₂ CH ₃	H	CI	NSO ₂ N(CH ₃) ₂	0
1.0948	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	$NSO_2N(CH_3)_2$	0
1.0949	Н	Н	CF ₃	Н	F	$NSO_2N(CH_3)_2$	0
1.0950	Н	н	CF ₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.0951	Н	Н	CF ₃	Н	Н	$NSO_2N(CH_3)_2$	0
1.0952	Н	Н	CH ₂ OCH ₂ CF ₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0953	Н	Н	CH ₂ OCH ₂ CF ₃	Н	CI	NSO₂N(CH₃)₂	0
1.0954	Н	Н	CH ₂ OCH ₂ CF ₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0955	Н	Н	CH₂OCH₂Ph	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0956	H	Н	CH ₂ OCH ₂ Ph	Н	CI	$NSO_2N(CH_3)_2$	0
1.0957	Н	Н	CH ₂ OCH ₂ Ph	Н	Н	$NSO_2N(CH_3)_2$	0
1.0958	Н	Н	CH ₂ OCH ₂ CH=CH ₂	Н	F	$NSO_2N(CH_3)_2$	0
1.0959	Н	Н	CH ₂ OCH ₂ CH=CH ₂	Н	CI	$NSO_2N(CH_3)_2$	0
1.0960	Н	Н	CH ₂ OCH ₂ CH=CH ₂	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0961	н	Н	CH ₂ N N	Н	F	NSO₂N(CH₃)₂	
1.0962	Н	Н	CH ₂ N N O	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.0963	Н	н	CH ₂ N N N O	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0964	н	н	CH ₂ OOO	H	F	NSO₂N(CH₃)₂	0

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.0965		Н	CH ₂ O	Н	CI	NSO₂N(CH₃)₂	0
1.0966	Н	Н	CH ₂ O	H	H 	NSO₂N(CH₃)₂	
1.0967	Н	Н	CH ₂	н	F	NSO ₂ N(CH₃) ₂	0
1.0968	Н	Н	CH ₂	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.0969	Н	Н	CH ₂	Н	Н	NSO ₂ N(CH₃) ₂	0
1.0970	Н	Н	CH ₂ OCH ₂	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0971	Н	Н	CH ₂ OCH ₂ OO	Н	CI	NSO₂N(CH₃)₂	0
1.0972	Н	Н	CH ₂ OCH ₂ OO	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0973	Н	Н	CH ₂ O	Н	F	NSO₂N(CH₃)₂	0
1.0974	Н	Н	CH ₂ O	Н	Cl	NSO ₂ N(CH₃) ₂	0
1.0975	5 H	Н	CH ₂ O	Н	Н	NSO₂N(CH₃)₂	0
1.0976	6 H	Н	CH ₂ O O	Н	F	NSO₂N(CH₃)₂	0
1.097	7 H	і н	CH ₂ O O	н	CI	NSO₂N(CH₃)₂	0
1.097	8 H	і Н	CH ₂ O O	Н	Н	NSO₂N(CH₃)₂	0
1.097	9 H	н н	СН₃	Н	F	NSO ₂ N(CH ₃) ₂	1

No.	R₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.0980	Н	Н	CH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	1
1.0981	Н	Н	CH₂OCH₂CH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	1
1.0982	Н	Н	CH2CH2CH2OCH3	Н	F	$NSO_2N(CH_3)_2$	1
1.0983	Н	Н	CH₂CH₃	Н	F	NSO ₂ N(CH ₃) ₂	1
1.0984	_H_	H	CH₃	H	H.	NSO ₂ N(CH ₃) ₂	1
1.0985	Н	Н	CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	1
1.0986	Н	H·	CH2OCH2CH2OCH3	Н	Н	NSO ₂ N(CH ₃) ₂	1
1.0987	Н	Н	CH₂CH₂CH₂OCH₃	Н	Н	$NSO_2N(CH_3)_2$	1
1.0988	Н	Н	CH₂CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	1
1.0989	СНз	CH₃	CH ₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0990	СН₃	CH₃	CH ₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.0991	СН₃	CH₃	CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0992	СН₃	CH₃	CH₃	CH ₃	F	NSO ₂ N(CH ₃) ₂	0
1.0993	СН₃	CH₃	CH₃	CH₃	Cl	NSO ₂ N(CH ₃) ₂	0
1.0994	CH₃	CH₃	CH₃	CH ₃	Н	$NSO_2N(CH_3)_2$	0 .
1.0995	CH ₃	CH₃	CH₂CH₃	Н	F	$NSO_2N(CH_3)_2$	0
1.0996	CH	CH₃	CH₂CH₃	Н	CI	$NSO_2N(CH_3)_2$	0
1.0997	CH	CH₃	CH₂CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.0998	CH	₃ CH₃	CH ₂ CH ₂ CH ₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.0999	CH:	₃ CH₃	CH ₂ CH ₂ CH ₃	Н	Cl	NSO ₂ N(CH ₃) ₂	0
1.1000	CH	₃ CH₃	CH ₂ CH ₂ CH ₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1001	CH	₃ CH₃	CH₂OCH₃	Н	F	NSO₂N(CH₃)₂	0
1.1002	CH	₃ CH₃	CH₂OCH₃	Н	Cl	NSO ₂ N(CH ₃) ₂	0
1.1003	CH	₃ CH₃	CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1004	1 CH	₃ СН₃	CH ₂ OCH ₂ CH ₃	Н	F	NSO₂N(CH₃)₂	0
1.100	5 CH	₃ CH₃	CH ₂ OCH ₂ CH ₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1006	6 CH	₃ CH₃	CH ₂ OCH ₂ CH ₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1007	7 CH	₃ CH₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	F	$NSO_2N(CH_3)_2$	0
1.100	в СН	l₃ CH₃	CH2OCH2CH2OCH3	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.100	9 CH	l₃ CH₃	CH₂OCH₂CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.101	0 CH	I₃ CH₃	CH2OCH2CH2OCH2CH3	, Н	F	NSO₂N(CH₃)₂	0
1.101	1 CH	I₃ CH₃	CH2OCH2CH2OCH2CH3	, н	CI	NSO ₂ N(CH ₃) ₂	0
1.101	2 CH	l₃ CH₃	CH2OCH2CH2OCH2CH3	, н	Н	NSO ₂ N(CH ₃) ₂	0

No. R ₁ R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.1013 CH₃ CH₃	CH₂CH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1014 CH ₃ CH ₃	CH₂CH₂OCH₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1015 CH ₃ CH ₃	CH₂CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1016 CH ₃ CH ₃	CH₂OCH₂C≣CH	Н	F	NSO₂N(CH₃)₂	0
1.1017_CH ₃ _CH ₃ _	CH ₂ OCH ₂ C≣CH	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1018 CH ₃ CH ₃	CH ₂ OCH ₂ C≡CH	Н	Н	NSO₂N(CH₃)₂	0
1.1019 CH ₃ CH ₃	CH₂OCH₂C≡CCH₃	Н	F	NSO₂N(CH₃)₂	0
1.1020 CH ₃ CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	$NSO_2N(CH_3)_2$	0
1.1021 CH ₃ CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1022 CH ₃ CH ₃	CH₂CH₂CH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1023 CH ₃ CH ₃	CH₂CH₂CH₂OCH₃	Н	Cl	NSO ₂ N(CH ₃) ₂	0
1.1024 CH ₃ CH ₃	CH ₂ CH ₂ CH ₂ OCH ₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1025 CH ₃ CH ₃	CH₂OCH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1026 CH ₃ CH ₃	CH₂OCH₂OCH₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1027 CH ₃ CH ₃	CH₂OCH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1028 CH ₃ CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1029 CH ₃ CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	H	CI	$NSO_2N(CH_3)_2$	0
1.1030 CH ₃ CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	$NSO_2N(CH_3)_2$	0
1.1031 CH ₃ CH ₃	CF₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1032 CH ₃ CH ₃	CF₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1033 CH ₃ CH ₃	CF₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1034 CH ₃ CH ₃	CH ₂ OCH ₂ CF ₃	Н	F	NSO ₂ N(CH ₃) ₂	0 .
1.1035 CH ₃ CH ₃	CH₂OCH₂CF₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1036 CH ₃ CH ₃		Н	Н	$NSO_2N(CH_3)_2$	0
1.1037 CH ₃ CH ₃	CH₂OCH₂Ph	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1038 CH ₃ CH ₃	CH₂OCH₂Ph	Н	Cl	NSO ₂ N(CH ₃) ₂	0
1.1039 CH ₃ CH ₃	CH₂OCH₂Ph	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1040 CH ₃ CH ₃	CH ₂ OCH ₂ CH=CH ₂	Н	F	$NSO_2N(CH_3)_2$	0
1.1041 CH₃ CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1042 CH ₃ CH ₃	CH ₂ OCH ₂ CH=CH ₂	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1043 CH ₃ CH ₃	CH ₂ N N	Н	F	NSO₂N(CH₃)₂	0
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No. R ₁ R ₂	Z ₁	R ₃₀	Х	Υ	p Physical data
1.1044 CH ₃ CH ₃	CH ₂ N N O	Н	CI	NSO₂N(CH₃)₂	0
1.1045 CH₃ CH₃	CH ₂ N N O	H 	Н	NSO₂N(CH₃)₂	0
1.1046 CH₃ CH₃	CH ₂ O O	H	F	NSO ₂ N(CH ₃) ₂	0
1.1047 CH₃ CH₃	CH ₂ O	Н	Cl	NSO ₂ N(CH ₃) ₂	O
1.1048 CH₃ CH₃	CH ₂ O	Н	Н	NSO₂N(CH₃)₂	0
1.1049 CH ₃ CH ₃	CH ₂	Н	F	NSO₂N(CH₃)₂	0
1.1050 CH ₃ CH ₃	CH ₂	Н	CI	NSO₂N(CH₃)₂	0
1.1051 CH ₃ CH ₃	CH ₂	Н	Н	NSO₂N(CH₃)₂	0
1.1052 CH ₃ CH ₃	CH ₂ OCH ₂	Н	F	NSO₂N(CH₃)₂	0
1.1053 CH₃ CH₃	CH ₂ OCH ₂	H	Cl	NSO₂N(CH₃)₂	0
1.1054 CH ₃ CH ₃	CH ₂ OCH ₂ OO	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1055 CH₃ CH₃	CH₂O O	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1056 CH ₃ CH ₃	CH₂O CH₂O	Н	CI	NSO₂N(CH₃)₂	0

No. R ₁ R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.1057 CH₃ CH₃	CH ₂ O	Н	Н	NSO₂N(CH₃)₂	0
1.1058 CH ₃ CH ₃	CH ₂ O O	Н	F	NSO₂N(CH₃)₂	0
1.1059 CH ₃ CH ₃	CH ₂ O O	H	CI	NSO₂N(CH₃)₂	0
1.1060 CH ₃ CH ₃	CH ₂ O O	Н	Н	NSO₂N(CH₃)₂	0
1.1061 CH₃ CH₃	CH₃	Н	F	NSO₂N(CH₃)₂	1
1.1062 CH₃ CH₃	CH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	1
1.1063 CH₃ CH₃	CH₂OCH₂CH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	1
1.1064 CH ₃ CH ₃	CH ₂ CH ₂ CH ₂ OCH ₃	Н	F	NSO ₂ N(CH ₃) ₂	1
1.1065 CH ₃ CH ₃	CH₂CH₃	Н	F	$NSO_2N(CH_3)_2$	1
1.1066 CH ₃ CH ₃	CH₃	Н	Н	$NSO_2N(CH_3)_2$	1
1.1067 CH ₃ CH ₃	CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	1
1.1068 CH ₃ CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	Н	NSO ₂ N(CH ₃) ₂	1
1.1069 CH ₃ CH ₃	CH₂CH₂CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	1
1.1070 CH ₃ CH ₃	CH₂CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	1
1.1071 H CH₃	CH₃	Н	F	NSO₂N(CH₃)₂	0
1.1072 H CH₃	CH₃	·H	CI	NSO ₂ N(CH ₃) ₂	0
1.1073 H CH₃	CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1074 H CH ₃	CH₃	CH:	₃ F	NSO ₂ N(CH ₃) ₂	0
1.1075 H CH₃	CH₃	CH	₃ CI	NSO₂N(CḤ₃)₂	0
1.1076 H CH ₃	CH₃	CH	₃ H	NSO ₂ N(CH ₃) ₂	0
1.1077 H CH₃	CH₂CH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1078 H CH ₃	CH₂CH₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1079 H CH₃	CH₂CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1080 H CH ₃	CH₂CH₂CH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1081 H CH₃	CH₂CH₂CH₃	Н	CI	NSO₂N(CH₃)₂	0
1.1082 H CH₃	CH₂CH₂CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1083 H CH₃	CH ₂ OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	0

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No.	R₁	R ₂	Z ₁	R ₃₀	X	Y	p Physical data
1.1084	Н	CH ₃	CH₂OCH₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1085	Н	CH ₃	CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1086	Н	CH ₃	CH₂OCH₂CH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1087	Н	CH ₃	CH₂OCH₂CH₃	Н	CI	NSO₂N(CH₃)₂	0
1.1088	_H_	CH₃	CH₂OCH₂CH₃	Н	Н.	NSO ₂ N(CH ₃) ₂	0
1.1089	Н	CH₃	CH2OCH2CH2OCH3	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1090	Н	CH ₃	CH2OCH2CH2OCH3	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1091	Н	CH ₃	CH₂OCH₂CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1092	Н	CH₃	$CH_2OCH_2CH_2OCH_2CH_3$	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1093	Н	CH ₃	$CH_2OCH_2CH_2OCH_2CH_3$	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1094	Н	CH ₃	CH2OCH2CH2OCH2CH3	Н	H	NSO ₂ N(CH ₃) ₂	0
1.1095	Н	CH ₃	CH₂CH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1096	Н	CH₃	CH₂CH₂OCH₃	Н	Cl	NSO ₂ N(CH ₃) ₂	0
1.1097	Н	CH ₃	CH₂CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1098	Н	CH₃	CH₂OCH₂C≡CH	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1099	Н	CH₃	CH₂OCH₂C≡CH	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1100	Н	CH₃	CH₂OCH₂C≡CH	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1101	Н	CH₃	CH ₂ OCH ₂ C≡CCH ₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1102	2 H	CH₃	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1103	8 H	CH₃	CH ₂ OCH ₂ C≡CCH ₃	Н	H	NSO ₂ N(CH ₃) ₂	0
1.1104	ŧ H	CH₃	CH ₂ CH ₂ CH ₂ OCH ₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1105	5 H	CH₃	CH ₂ CH ₂ CH ₂ OCH ₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1106	5 H	CH	CH ₂ CH ₂ CH ₂ OCH ₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1107	7 H	CH	CH₂OCH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.110	в н	CH	3 CH₂OCH₂OCH3	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.110	9 H	CH:	CH ₂ OCH ₂ OCH ₃	Н	Н	NSO₂N(CH₃)₂	0
1.111	0 H	CH:	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	NSO ₂ N(CH ₃) ₂	0
1.111	1 H	I CH	3 CH ₂ N(CH ₃)SO ₂ CH ₃	Н	CI		0
1.111	2 F	I CH	3 CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.111	3 F	н сн	₃ CF ₃	Н	ı F	NSO ₂ N(CH ₃) ₂	0
1.111	4 F	H CH	₃ CF ₃	H	l Ci	NSO ₂ N(CH ₃) ₂	0
1.111	5 F	н сн	CF ₃	H	н н	NSO ₂ N(CH ₃) ₂	0
1.111	6 H	н СН	3 CH ₂ OCH ₂ CF ₃	F	l F	NSO ₂ N(CH ₃) ₂	0

No.	R₁	R ₂	Z ₁	R ₃₀	Х	Y	p Physical data
1.1117	Н	CH₃	CH₂OCH₂CF₃	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1118	Н	CH₃	CH₂OCH₂CF₃	Н	Н	$NSO_2N(CH_3)_2$	0
1.1119	Н	CH₃	CH₂OCH₂Ph	Н	F	$NSO_2N(CH_3)_2$	0
1.1120	Н	CH ₃	CH₂OCH₂Ph	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1121	Н	CH₃	CH₂OCH₂Ph	<u>H</u>	Н	NSO ₂ N(CH ₃) ₂	.0
1.1122	Н	CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1123	Н	CH₃	CH₂OCH₂CH=CH₂	Н	CI	$NSO_2N(CH_3)_2$	0
1.1124	Н	CH₃	CH ₂ OCH ₂ CH=CH ₂	Н	Н	$NSO_2N(CH_3)_2$	0
1.1125	Н	CH₃	CH ₂ N N	Н	F	NSO₂N(CH₃)₂	0
1.1126	Н	CH₃	CH ₂ N N N N N N N N N N N N N N N N N N N	Н	CI	NSO₂N(CH₃)₂	0
1.1127	Н	CH₃	CH ₂ N N N O	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1128	Н	CH₃	CH ₂ O	н	F	NSO ₂ N(CH ₃) ₂	0
1.1129	Н	CH₃	CH ₂ O		CI	NSO ₂ N(CH ₃) ₂	0
1.1130) Н	CH₃	CH ₂ OOO	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1131	і н	CH₃	CH ₂ O	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1132	2 H	I CH₃	CH ₂	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1133	3 H	I CH₃	CH ₂ O	Н	Н	NSO₂N(CH₃)₂	0

No.	R₁	R ₂	Z ₁	R ₃₀	X	Y	p Physical data
1.1134	Н	CH ₃	CH ₂ OCH ₂	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1135	Н	CH₃	CH ₂ OCH ₂	Н	CI	NSO₂N(CH₃)₂	0
1.1136	Н	СН₃	CH ₂ OCH ₂	Н	Н	NSO₂N(CH₃)₂	0
1.1137	Н	СН₃	CH ₂ O	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1138	Н	CH₃	CH ₂ O	Н	CI	NSO₂N(CH₃)₂	0
1.1139	Н	CH ₃	CH₂O CO	Н	Н	NSO₂N(CH₃)₂	0
1.1140	Н	CH₃	CH ₂ O O	Н	F	NSO ₂ N(CH ₃) ₂	0
1.1141	Н	CH₃	CH ₂ O O	Н	CI	NSO ₂ N(CH ₃) ₂	0
1.1142	Н	CH₃	CH₂O O	Н	Н	NSO ₂ N(CH ₃) ₂	0
1.1143	Н	CH₃	CH₃	Н	F	NSO ₂ N(CH ₃) ₂	1
1.1144	Н	CH₃	CH₂OCH₃	Н	F	NSO ₂ N(CH ₃) ₂	1
1.1145	Н	CH₃	CH2OCH2CH2OCH3	Н	F	$NSO_2N(CH_3)_2$	1
1.1146	Н	CH₃		Н	F	$NSO_2N(CH_3)_2$	1
1.1147	Н	CH₃	CH₂CH₃	Н	.F	NSO ₂ N(CH ₃) ₂	1
1.1148	Н	CH₃	CH₃	Н	Н	NSO ₂ N(CH ₃) ₂	1
1.1149	Н	CH₃	CH₂OCH₃	Н	Н	NSO ₂ N(CH ₃) ₂	1
1.1150	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	Н	NSO ₂ N(CH ₃) ₂	1
1.1151	Н	CH₃	CH ₂ CH ₂ CH ₂ OCH ₃	Н	Н	NSO₂N(CH₃)₂	1
1.1152	Н	CH ₃	CH₂CH₃	Н	Н	NSO₂N(CH₃)₂	1
1.1153	Н	Н	CH₃	Н	F	'c<	O ¹ H NMR (300 MHz; CDCl ₃) ō 16.58 (s, 1H 7.55 (m, 2H); 6.48 (m 1H); 6.40 (m, 1H); 2.9

No.	R₁	R ₂	Z ₁	R ₃₀	X	Υ	p	Physical data
1.1154	Н	H	СН₃	Н	F	C(=C(CH₃)₂)	0	(m, 1H); 2.72 (m, 1H); 2.50 (s, 3H); 0.90-0.65 (m, 4H). ¹ H NMR (300 MHz; CDCl ₃) ō 16.25 (s, 1H); 7.56 (m, 2H); 6.52 (m, 1H); 6.45 (m, 1H); 4.20-
1.1155	н	н	СН₃	н	н	CH₂CH(COOCH₃)	0	(m, 1H); 3.98 (m, 1H); 2.45 (s, 3H); 1.80 (s, 3H); 1.71 (s, 3H).
,		,						¹ H NMR (300 MHz; CDCl ₃) i.a. ō 7.44 (d, 2H); 6.54 (t, 1H); 6.53 + 6.42 (2d, 1H); 3.71 + 3.68 (2s, 3H); 2.41 + 2.40 (2s, 3H);
1.1156	Н	н	CH₃	Н	Н	CH₂CH(COOCH₃)	0	tautomeric mixture. R ₇ =H; NEt ₃ salt (Example P14)

Table 2: Compounds of formula Ic:

No.	R₁	R₂	Z ₁	R ₃₀	Х	Υ	Physical data
2.0000	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	F	CH ₂	
2.0001	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	CI	CH ₂	
2.0002	Н	Н	CH2OCH2CH2OCH3	Н	Н	CH ₂	
2.0003	Н	Н	CH2OCH2CH2OCH2CH3	Н	F	CH ₂	
2.0004	Н	Н	CH2OCH2CH2OCH2CH3	Н	CI	CH ₂	
2.0005	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	CH ₂	

No.	R ₁	R ₂ Z ₁	R ₃₀ X Y Physical data
2.0006	Н	H CH ₂ N(CH ₃)SO ₂ CH ₃	H F CH ₂
2.0007	Н	H CH ₂ N(CH ₃)SO ₂ CH ₃	H CI CH₂
2.0008	Н	H CH ₂ N(CH ₃)SO ₂ CH ₃	H H CH₂
2.0009	Н	H CH₂OCH₂Ph	H F CH₂
2.0010	_H_	H CH₂OCH₂Ph	H Cl CH₂
2.0011	Н	H CH₂OCH₂Ph	H H CH₂
2.0012	Н	H CH ₂ OCH ₂ CH ₂ OH	H F CH₂
2.0013	Н	H CH2OCH2CH2OH	H CI CH₂
2.0014	Н	H CH₂OCH₂CH₂OH	H H CH₂
2.0015	Н	H CH2OCH2CH2CI	H F CH₂
2.0016	Н	H CH ₂ OCH ₂ CH ₂ Cl	H Cl CH₂
2.0017	Н	H CH ₂ OCH ₂ CH ₂ Cl	H H CH₂
2.0018	Н	H CH ₂ OCH ₂ CF ₃	H F CH₂
2.0019	Н	H CH ₂ OCH ₂ CF ₃	H Cl CH₂
2.0020	Н	H CH ₂ OCH ₂ CF ₃	H H CH₂
2.0021	Н	H CH ₂ OCH ₂ CH=CH ₂	H F CH ₂
2.0022	H	H CH ₂ OCH ₂ CH=CH ₂	H CI CH₂
2.0023	Н	H CH ₂ OCH ₂ CH=CH ₂	H H CH₂
2.0024	Н	H CH ₂ O(CO)CH ₃	H F CH₂
2.0025	Н	H CH₂O(CO)CH₃	H CI CH₂
2.0026	Н	H CH₂O(CO)CH₃	H H CH₂
2.0027	Н	H CH ₂ OCH ₂ C≡CH	H F CH₂
2.0028	Н	H CH ₂ OCH ₂ C≡CH	H CI CH₂
2.0029	Н	H CH ₂ OCH ₂ C≡CH	H H CH₂
2.0030	Н	H CH ₂ OCH ₂ C≡CCH ₃	H F CH₂
2.0031	Н	H CH ₂ OCH ₂ C≡CCH ₃	H CI CH₂
2.0032	Н	H CH2OCH2C≡CCH3	H H CH₂
2.0033	Н	H N	H F CH ₂
		CH ₂ N	
2.0034	Н	H N N-	H CI CH₂
		CH ₂ "	

No.	R ₁	R ₂	Z ₁			Υ	Physical data
2.0035	Н	H	CH ₂ N N O	Н	Н	CH₂	
2.0036	Н	Н	CH ₂ O O	Н	F	CH₂	
2.0037	Н	Н	CH ₂ O	н	CI	CH ₂	
2.0038	Н	Н	CH ₂ O O	н	Н	CH ₂	
2.0039	Н	Н	CH ₂	н	F	CH₂	
2.0040	Н	Н	CH ₂	Н	С	I CH₂	
2.0041	Н	Н	CH ₂	Н	Н	I CH₂	
2.0042	Н	Н	CH ₂ OCH ₂	Н	F	CH ₂	
2.0043	Н	Н	CH ₂ OCH ₂ OO	Н	С	CH ₂	
2.0044	Н	Н	CH ₂ OCH ₂ OO	H	ŀ	H CH₂	
2.0045	Н	Н	CH₂O O	Н	F	F CH₂	
2.0046	Н	Н	CH ₂ O O	Н	C	CI CH₂	
2.0047	Н	Н	CH ₂ O O	Н		H CH₂	
2.0048	Н	H	CH ₂ O O	Н		F CH₂	

No.	R₁	R ₂	Z ₁	R ₃₀	Х	Υ	Physical data
2.0049	Н	Н	CH ₂ O O	Н	CI	CH₂	
2.0050	Н	Н	CH ₂ O O	Н	Н	CH₂	y. •
2.0051	CH₃	СН₃	CH₂OCH₂CH₂OCH₃	Н	F	CH ₂	
2.0052	CH₃	CH₃	CH2OCH2CH2OCH3	Н	CI	CH ₂	
2.0053	CH₃	CH₃	CH2OCH2CH2OCH3	Н	Н	CH ₂	
2.0054	CH₃	CH₃	CH2OCH2CH2OCH2CH3	Н	F	CH ₂	
2.0055	CH₃	CH ₃	CH2OCH2CH2OCH2CH3	Ή	Cl	CH ₂	
2.0056	CH₃	CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	CH ₂	
2.0057	CH₃	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	CH ₂	
2.0058	CH₃	, CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Ci	CH ₂	
2.0059	CH₃	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	CH_2	
2.0060	CH	₃ CH₃	CH ₂ OCH ₂ Ph	Н	F	CH ₂	
2.0061	CH	3 CH₃	CH₂OCH₂Ph	Н	CI	CH ₂	
2.0062	CH	₃ CH₃	CH₂OCH₂Ph	Н	Н	CH ₂	
2.0063	CH:	₃ CH₃	CH ₂ OCH ₂ CH ₂ OH	Н	F	CH ₂	
2.0064	CH	₃ CH₃	CH₂OCH₂CH₂OH	Н	CI	CH ₂	
2.0065	CH	3 CH3	CH ₂ OCH ₂ CH ₂ OH	Н	Н	CH ₂	
2.0066	CH	3 CH3	CH₂OCH₂CH₂CI	Н	F	CH ₂	
2.0067	CH	3 CH	CH₂OCH₂CH₂ CI	Н	CI	CH ₂	
2.0068	CH	3 CH	3 CH2OCH2CH2 CI	Н	Н	CH ₂	
2.0069	CH	3 CH	3 CH2OCH2CF3	Н		CH₂	
2.0070	CH	l ₃ CH	3 CH ₂ OCH ₂ CF ₃	Н		I CH ₂	
2.0071		-	3 CH2OCH2CF3	Н		CH₂	
			3 CH2OCH2CH=CH2	Н		CH₂	
2.0073	3 CH	l₃ CH	3 CH2OCH2CH=CH2	Н		I CH₂	
2.0074	4 CH	l₃ CH	3 CH2OCH2CH=CH2	H		I CH₂	
2.007		-	₃ CH ₂ O(CO)CH ₃	Н		_	
2.0076	6 CH	l₃ CH	₃ CH ₂ O(CO)CH ₃	Н		I CH ₂	
2.007	7 CH	l₃ CH	₃ CH ₂ O(CO)CH ₃	Н	۲	I CH₂	

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Υ	Physical data
2.0078	CH₃	CH₃	CH ₂ OCH ₂ C≡CH	Н	F	CH₂	
2.0079	CH₃	СН₃	CH₂OCH₂C≡CH	Н	CI	CH ₂	
2.0080	CH ₃	СН3	CH₂OCH₂C≡CH	Н	Н	CH ₂	
2.0081	CH₃	CH ₃	CH₂OCH₂C≡CCH₃	Н	F	CH ₂	
 2.0082	CH ₃	CH ₃	CH ₂ OCH ₂ C≡CCH ₃	Н	CI	CH ₂	
2.0083	CH₃	CH₃	CH ₂ OCH ₂ C≡CCH ₃	Н		CH ₂	
2.0084	CH ₃	CH₃	CH ₂ N N	Н	F	CH₂	
2.0085	CH₃	CH₃	CH ₂ N N	Н	CI	CH ₂	
2.0086	CH ₃	CH₃	CH ₂ N N N O	Н	Н	CH ₂	·
2.0087	CH₃	, CH₃	CH ₂ O	Н	F	CH₂	
2.0088	CH	₃ CH;	CH ₂ OOO	Н	CI	CH₂	
2.0089	CH	₃ CH	CH ₂ OOO	Н	Н	CH₂	
2.0090	СН	₃ CH	3 CH ₂	Н	F	CH ₂	·
2.0091	СН	₃ CH	ŏ	Н	С	I CH₂	
2.0092	CH	l₃ CH	I ₃ CH ₂ O	Н	Н	I CH₂	
2.0093	CH	l₃ CH	GH ₂ OCH ₂ O	Н	F	CH ₂	

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Υ	Physical data
2.0094	CH₃	CH₃	CH ₂ OCH ₂	Н	CI	CH₂	
2.0095	СН₃	СН₃	CH ₂ OCH ₂	Н	Н	CH ₂	
2.0096	CH ₃	CH₃	CH ₂ O O	Н.	F	CH ₂	
2.0097	CH₃	CH₃	CH ₂ O	Н	CI	CH ₂	
2.0098	CH ₃	CH₃	CH ₂ O O	Н	Н	CH ₂	
2.0099	CH₃	CH ₃	CH ₂ O O	Н	F	CH ₂	
2.0100	СН₃	CH₃	CH,O CO	Н	CI	CH₂	
2.0101	CH₃	СН₃	CH,0 0	Н	Н	CH₂	
2.0102	Н	СН₃	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	F	CH ₂	
2.0103	Н		CH₂OCH₂CH₂OCH₃	Н	CI	CH ₂	
2.0104	Н	СН₃	CH₂OCH₂CH₂OCH₃	Н	Н	CH ₂	•
2.0105	Н	CH₃	CH2OCH2CH2OCH2CH3	Н	F	CH ₂	
2.0106	Н	CH₃	CH2OCH2CH2OCH2CH3	Н	CI	CH ₂	
2.0107	Н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	CH ₂	
2.0108	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F	CH ₂	
2.0109	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	C	I CH₂	
2.0110	Н		CH ₂ N(CH ₃)SO ₂ CH ₃	Н			
2.0111	Н		, CH₂OCH₂Ph	Н		CH ₂	
2.0112			CH₂OCH₂Ph	Н		I CH ₂	
2.0113			CH₂OCH₂Ph	Н		_	
2.0114			CH₂OCH₂CH₂OH	Н			
2.0115			CH ₂ OCH ₂ CH ₂ OH	Н		I CH₂	
2.0116	Н	UH:	3 CH2OCH2CH2OH	Н		I CH₂	

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No.	R₁	R_2 Z_1	R ₃₀ X Y	Physical data
2.0117	Н	CH ₃ CH ₂ OCH ₂ CH ₂ CI	H F CH₂	
2.0118	Н	CH ₃ CH ₂ OCH ₂ CH ₂ CI	H CI CH₂	
2.0119	Н	CH ₃ CH ₂ OCH ₂ CH ₂ CI	H H CH₂	
2.0120	Н	CH ₃ CH ₂ OCH ₂ CF ₃	H F CH₂	
2.0121_	_H_	_CH3_CH2OCH2CF3	H_CI_CH₂	
2.0122	Н	CH₃ CH₂OCH₂CF₃	H H CH₂	
2.0123	Н	CH ₃ CH ₂ OCH ₂ CH=CH ₂	H F CH ₂	
2.0124	H	CH ₃ CH ₂ OCH ₂ CH=CH ₂	H CI CH2	
2.0125	Н	CH ₃ CH ₂ OCH ₂ CH=CH ₂	H H CH₂	
2.0126	Н	CH ₃ CH ₂ O(CO)CH ₃	H F CH₂	
2.0127	Н	CH₃ CH₂O(CO)CH₃	H CI CH₂	
2.0128	Н	CH ₃ CH ₂ O(CO)CH ₃	H H CH₂	
2.0129	Н	CH₃ CH₂OCH₂C≡CH	H F CH₂	
2.0130	H	CH₃ CH₂OCH₂C≡CH	H CI CH₂	
2.0131	Н	CH₃ CH₂OCH₂C≡CH	H H CH₂	
2.0132	Н	CH₃ CH₂OCH₂C≡CCH₃	H F CH ₂	
2.0133	Н	CH₃ CH₂OCH₂C≡CCH₃	H Cl CH₂	
2.0134	Н	CH₃ CH₂OCH₂C≡CCH₃	H H CH₂	•
2.0135	Н	CH₃ CH₂ N N O	H F CH₂	
2.0136	Н	CH₃ CH₂ N N O	H CI CH₂	
2.0137	Н	CH ₃	H H CH₂	
2.0138	Н	CH ₃	H F CH₂	

No.	R ₁	R_2	Z ₁	R ₃₀ X Y	Physical data
2.0139	Н	CH₃	CH ₂ O O	H Cl CH₂	
2.0140	Н	CH₃	N-N	H H CH₂	
0.0444		CH	CH ₂ O	H F CH₂	•
2.0141	п	CH₃	CH ₂	11 1 0112	
2.0142	Н	CH₃	CH ₂	H Cl CH₂	
2.0143	Н	CH₃	CH ₂ O	H H CH₂	
2.0144	Н	CH₃	CH ₂ OCH ₂	H F CH₂	
2.0145	Н	CH₃	CH ₂ OCH ₂	H CI CH₂	
2.0146	Н	CH ₃	CH ₂ OCH ₂ OO	H H CH₂	
2.0147	Н	CH₃	CH ₂ O	H F CH₂	
2.0148	Н	CH₃	CH ₂ O	H Cl CH₂	
2.0149	Н	CH₃	CH ₂ O	H H CH₂	
2.0150	Н	CH₃		H F CH₂	· .
2.0151	Н	CH₃	CH ₂ O O	H CI CH₂	
2.0152	H	I CH₃	CH ₂ O O	H H CH₂	
2.0153	-	і н	CH ₂ OCH ₂ CH ₂ OCH ₃	CH₃ F CH₂	

No.	R ₁	R ₂	Z ₁	R ₃₀ X Y	Physical data
2.0154	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₃	CH₃ CI CH₂	
2.0155	Н	Н	CH₂OCH₂CH₂OCH₃	CH₃ H CH₂	
2.0156	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	CH ₃ F CH ₂	
2.0157	Н	Н	CH2OCH2CH2OCH2CH3	CH₃ CI CH₂	
2.0158_	_H_	H_	_CH2OCH2CH2OCH2CH3	CH₃ H CH₂	
2.0159	Н	Н	CH₂N(CH₃)SO₂CH₃	CH ₃ F CH ₂	
2.0160	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	CH₃ CI CH₂	
2.0161	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	CH₃ H CH₂	
2.0162	Н	Н	CH₂OCH₂Ph	CH₃ F CH₂	
2.0163	Н	Н	CH₂OCH₂Ph	CH ₃ CI CH ₂	
2.0164	Н	Н	CH₂OCH₂Ph	CH ₃ H CH ₂	•
2.0165	Н	Н	CH₂OCH₂CH₂OH	CH ₃ F CH ₂	
2.0166	Н	Н	CH ₂ OCH ₂ CH ₂ OH	CH ₃ CI CH ₂	
2.0167	Н	Н	CH ₂ OCH ₂ CH ₂ OH	CH₃ H CH₂	
2.0168	Н	Н	CH ₂ OCH ₂ CH ₂ CI	CH₃ F CH₂	
2.0169	Н	Н	CH ₂ OCH ₂ CH ₂ CI	CH₃ CI CH₂	
2.0170	Н	Н	CH ₂ OCH ₂ CH ₂ CI	CH₃ H CH₂	
2.0171	Н	Н	CH₂OCH₂CF₃	CH₃ F CH₂	
2.0172	Н	Н	CH₂OCH₂CF₃	CH₃ CI CH₂	
2.0173	Н	Н	CH₂OCH₂CF₃	CH₃ H CH₂	
2.0174	Н	Н	CH ₂ OCH ₂ CH=CH ₂	CH₃ F CH₂	
2.0175	Н	Н	CH ₂ OCH ₂ CH=CH ₂	CH₃ CI CH₂	
2.0176	Н	Н	-	CH₃ H CH₂	
2.0177	Н	Н	CH ₂ O(CO)CH ₃	CH₃ F CH₂	
2.0178	Н	Н	I CH ₂ O(CO)CH ₃	CH₃ CI CH₂	
2.0179	Н	1-	I CH ₂ O(CO)CH ₃	CH₃ H CH₂	
2.0180	Н	F	I CH2OCH2C≡CH	CH₃ F CH₂	
2.0181	Н	.	I CH ₂ OCH ₂ C≡CH	CH₃ CI CH₂	
2.0182	Н	ŀ	_	CH₃ H CH₂	
2.0183	Н	ŀ	-	CH₃ F CH₂	
2.0184	Н		H CH2OCH2C≡CCH3	CH₃ Cl CH₂	
2.0185	Н	H	H CH2OCH2C≡CCH3	CH₃ H CH₂	

No.	R₁	R ₂	Z ₁	R ₃₀ X Y	Physical data
2.0186	Н	Н	CH ₂ N N N N N N N N N N N N N N N N N N N	CH₃ F CH₂	
2.0187	Н	Н		CH ₃ CI CH ₂	
2.0188	H	Н	CH ₂ N N	CH₃ H CH₂	
2.0189	н	Н	CH ₂ OOO	CH₃ F CH₂	
2.0190	н	Н	CH ₂ O O	CH₃ CI CH₂	
2.0191	н	Н	CH ₂ O O	CH₃ H CH₂	
2.0192	Н	Н	CH ₂	CH ₃ F CH ₂	
2.0193	Н	Н	CH ₂	CH₃ CI CH₂	
2.0194	Н	Н	CH ₂	CH₃ H CH₂	
2.0195	Н	Н	CH ₂ OCH ₂	CH₃ F CH₂	
2.0196	н	Н	CH ₂ OCH ₂	CH₃ CI CH₂	
2.0197	Н	Н	CH ₂ OCH ₂	CH₃ H CH₂	
2.0198	Н	Н	CH ₂ O	CH₃ F CH₂	

No.	R₁	R ₂	Z ₁	R ₃₀	X	Υ	Physical data
2.0199	Н	Н	CH ₂ O	CH₃	CI	CH₂	
2.0200	Н	Н	CH ₂ O	CH ₃	Н	CH₂	
2:0201	—H	H	CH ₂ O O	-CH₃-	F	CH₂	
2.0202	н	Н	CH ₂ O O	CH₃	CI	CH ₂	
2.0203	Н	Н	CH ₂ O O	CH₃	Н	CH ₂	
2.0204	CH ₃	CH₃	CH₂OCH₂CH₂OCH₃	CH₃	F	CH ₂	
2.0205	CH₃	CH₃	CH₂OCH₂CH₂OCH₃	СН₃	CI	CH ₂	
2.0206	CH₃	CH₃	CH2OCH2CH2OCH3	СН₃	Н	CH ₂	
2.0207	CH₃	CH₃	CH2OCH2CH2OCH2CH3	CH ₃	F	CH ₂	
2.0208	CH₃	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	CH₃	CI	CH ₂	
2.0209	CH₃	CH₃	CH2OCH2CH2OCH2CH3	CH₃	Н	CH ₂	
2.0210	CH₃	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	CH₃	F	CH ₂	
2.0211	CH₃	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	CH₃	CI	CH₂	
2.0212	CH₃	CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	CH₃	Н	CH₂	•
2.0213	CH₃	CH	3 CH₂OCH₂Ph	CH₃	F	CH₂	
2.0214	CH₃	CH	3 CH2OCH2Ph			CH₂	
2.0215			₃ CH₂OCH₂Ph			CH₂	
2.0216	CH	CH	3 CH2OCH2CH2OH .	_		CH₂	
			3 CH2OCH2CH2OH			I CH₂	
			3 CH2OCH2CH2OH			CH₂	
			3 CH2OCH2CH2CI	_		CH₂	
			3 CH2OCH2CH2 CI			I CH₂	
	•	-	3 CH₂OCH₂CH₂ CI			I CH₂	
		-	3 CH ₂ OCH ₂ CF ₃			CH ₂	
			3 CH2OCH2CF3	-		I CH ₂	
2.0224	СН	₃ CH	3 CH2OCH2CF3	CH₃	. H	I CH₂	

No.	R ₁ R ₂	Z ₁	R ₃₀ X Y	Physical data
2.0225	CH ₃ CH ₃ CH ₂	OCH₂CH=CH₂	CH₃ F CH₂	
2.0226	CH ₃ CH ₃ CH ₂	OCH₂CH=CH₂	CH₃ Ci CH₂	
2.0227	CH ₃ CH ₃ CH ₂	OCH₂CH=CH₂	CH ₃ H CH ₂	•
2.0228	CH ₃ CH ₃ CH ₂	O(CO)CH ₃	CH₃ F CH₂	
2.0229	CH ₃ CH ₃ CH ₂	O(CO)CH ₃	CH ₃ Cl CH ₂	-
2.0230	CH ₃ CH ₃ CH ₂	O(CO)CH ₃	CH₃ H CH₂	
2.0231	CH ₃ CH ₃ CH ₂	OCH₂C≡CH	CH₃ F CH₂	
2.0232	CH ₃ CH ₃ CH ₂	2OCH2C≡CH	CH₃ Cl CH₂	
2.0233	CH₃ CH₃ CH₂	2OCH2C≡CH	CH₃ H CH₂	
2.0234	CH₃ CH₃ CH	2OCH2C≡CCH3	CH₃ F CH₂	
2.0235	CH ₃ CH ₃ CH ₅	2OCH2C≡CCH3	CH ₃ CI CH ₂	
2.0236	CH₃ CH₃ CH	2OCH2C≡CCH3	CH₃ H CH₂	
2.0237	CH₃ CH₃	N-N-	CH₃ F CH₂	·
		CH ₂ N		
2.0238	CH₃ CH₃	CH ₂ N N	CH₃ CI CH₂	
2.0239	CH ₃ CH ₃	CH ₂ N N O	CH₃ H CH₂	
2.0240) CH₃ CH₃	CH ₂ O O	CH₃ F CH₂	
2.0241	CH₃ CH₃	CH ₂ O O	CH₃ CI CH₂	•
2.0242	2 CH₃ CH₃	CH ₂ O	CH₃ H CH₂	
2.024	3 CH₃ CH₃	CH ₂ O	CH₃ F CH₂	

No.	R ₁	R ₂	Z ₁	R ₃₀ X		Physical data
2.0244	CH₃	CH₃	CH ₂	CH₃ CI (CH₂	
2.0245	СН₃	CH₃	CH ₂	CH₃ H (CH₂	
2.0246	CH₃	CH₃	CH ₂ OCH ₂	CH₃ F	CH ₂	
2.0247	CH₃	CH₃	CH ₂ OCH ₂	CH ₃ Cl	CH₂	
2.0248	CH ₃	СН₃	CH ₂ OCH ₂	CH₃ H	CH₂	
2.0249	CH₃	СН₃	CH ₂ O O	CH₃ F	CH₂	
2.0250	CH ₃	CH₃	CH ₂ O O	CH₃ CI	CH₂	
2.0251	CH₃	CH ₃	CH₂O CO	CH₃ H	CH₂	
2.0252	CH₃	CH₃	CH₂O CO	CH₃ F	CH ₂	
2.0253	СН₃	CH₃	CH ₂ O O	CH₃ CI	CH ₂	•
2.0254	. CH₃	CH₃	CH ₂ O O	CH₃ H	CH₂	
2.0255	5 H	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₃	CH₃ F	CH₂	
2.0256		_	CH ₂ OCH ₂ CH ₂ OCH ₃	CH ₃ CI	CH ₂	·
2.0257		CH₃	CH₂OCH₂CH₂OCH₃	CH₃ H	CH ₂	
2.0258	з н	CH₃	CH2OCH2CH2OCH2CH3	CH₃ F	CH ₂	
2.0259	э н	CH₃	CH2OCH2CH2OCH2CH3	CH₃ CI	CH ₂	
2.026	о н	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	CH₃ H	CH ₂	
2.026	1 H	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	CH₃ F	CH ₂	•
2.026	2 H	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	CH₃ CI	CH ₂	
2.026	3 Н	CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	CH₃ H	CH₂	

No.	R₁	R_2 Z_1	R ₃₀ X Y	Physical data
2.0264	Н	CH ₃ CH ₂ OCH ₂ Ph	CH₃ F CH₂	
2.0265	Н	CH ₃ CH ₂ OCH ₂ Ph	CH₃ Cl CH₂	
2.0266	Н	CH₃ CH₂OCH₂Ph	CH₃ H CH₂	
2.0267	Н	CH₃ CH₂OCH₂CH₂OH	CH₃ F CH₂	·
2.0268	_H_	CH₃ CH₂OCH₂CH₂OH	CH₃ CI CH₂	
2.0269	Н	CH3 CH2OCH2CH2OH	CH₃ H CH₂	
2.0270	Н	CH ₃ CH ₂ OCH ₂ CH ₂ Cl	CH₃ F CH₂	
2.0271	Н	CH ₃ CH ₂ OCH ₂ CH ₂ CI	CH₃ CI CH₂	
2.0272	Н	CH ₃ CH ₂ OCH ₂ CH ₂ CI	CH₃ H CH₂	
2.0273	Н	CH₃ CH₂OCH₂CF₃	CH₃ F CH₂	
2.0274	Н	CH₃ CH₂OCH₂CF₃	CH₃ CI CH₂	
2.0275	Н	CH₃ CH₂OCH₂CF₃	CH ₃ H CH ₂	
2.0276	Н	CH₃ CH₂OCH₂CH=CH₂	CH₃ F CH₂	
2.0277	Н	CH ₃ CH ₂ OCH ₂ CH=CH ₂	CH₃ CI CH₂	
2.0278	Н	CH ₃ CH ₂ OCH ₂ CH=CH ₂	CH₃ H CH₂	
2.0279	Н	CH₃ CH₂O(CO)CH₃	CH₃ F CH₂	
2.0280	Н	CH₃ CH₂O(CO)CH₃	CH₃ CI CH₂	
2.0281	Н	CH₃ CH₂O(CO)CH₃	CH₃ H CH₂	
2.0282	Н	CH₃ CH₂OCH₂C≡CH	CH₃ F CH₂	
2.0283	Н	CH₃ CH₂OCH₂C≡CH	CH₃ CI CH₂	
2.0284	Н	CH₃ CH₂OCH₂C≡CH	CH ₃ H CH ₂	
2.0285	Н	CH ₃ CH ₂ OCH ₂ C≡CCH ₃	CH₃ F CH₂	
2.0286	Н	CH₃ CH₂OCH₂C≡CCH₃	CH₃ CI CH₂	
2.0287	Н	CH₃ CH₂OCH₂C≡CCH₃	CH ₃ H CH ₂	
2.0288	Н	CH ₃	CH₃ F CH₂	
2.0289	Н	CH ₃	CH₃ CI CH₂	

No.	R₁	R ₂	Z ₁	R ₃₀ X Y	Physical data
2.0290	Н	CH₃	CH ₂ N N O	CH₃ H CH₂	
2.0291	Н	CH₃	CH ₂ O O	CH₃ F CH₂	
2.0292	Н	CH₃	CH ₂ O	CH₃ CI CH₂	
2.0293	Н	CH₃	CH ₂ O	CH₃ H CH₂	
2.0294	Н	CH₃	CH ₂	CH₃ F CH₂	
2.0295	Н	CH₃	CH ₂	CH₃ CI CH₂	
2.0296	Н	CH₃	CH ₂	CH₃ H CH₂	
2.0297	Н	CH₃	CH ₂ OCH ₂ OO	CH ₃ F CH ₂	
2.0298	Н	CH₃	CH ₂ OCH ₂ OO	CH₃ CI CH₂	
2.0299	Н	CH₃	CH ₂ OCH ₂ OO	CH₃ H CH₂	
2.0300	Н	CH₃	CH₂O O	CH₃ F CH₂	
2.0301	Н	I CH₃	CH ₂ O	CH₃ CI CH₂	
2.0302	H	l CH₃	CH ₂ O	CH₃ H CH₂	
2.0303	1	I CH₃	CH ₂ O O	CH₃ F CH₂	

No.	R₁	R ₂	Z ₁	R ₃₀ X Y	Physical data
2.0304	Н	CH₃	CH ₂ O O	CH₃ CI CH₂	
2.0305	Н	CH₃	CH ₂ O O	CH₃ H CH₂	

Table 3: Compounds of formula Id:

No.	R ₁	R ₂	Z ₁	R ₃₀	X	Y	р	Phys. data, remarks
3.0000	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	F	CH ₂	0	
3.0001	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₃	Н	CI	CH ₂	0	
3.0002	Н	Н	CH₂OCH₂CH₂OCH₃	Н	Н	CH ₂	0	
3.0003	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	F	CH ₂	0	
3.0004	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	CI	CH ₂	0	
3.0005	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	Н	Н	CH ₂		
3.0006	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	F			
3.0007	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	CI	CH₂	0	
3.0008	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	Н	Н	CH₂	0	
3.0009	Н	Н	CH₂OCH₂Ph	Н	F	CH₂		
3.0010	Н	Н	CH₂OCH₂Ph	H	CI	CH ₂	0	
3.0011	Н	Н	CH₂OCH₂Ph	Н	Н	CH ₂	0	
3.0012	Н	Н	CH₂OCH₂CH₂OH	Н	F	CH₂	0	
3.0013	Н	Н	CH₂OCH₂CH₂OH	Н		CH ₂		
3.0014	Н	Н	CH₂OCH₂CH₂OH	Н	Н	CH ₂	0	•
3.0015	Н	Н	CH₂OCH₂CH₂CI	Н	F	CH ₂	0	
3.0016	Н	Н	CH₂OCH₂CH₂ CI	Н	C	I CH₂	0	

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Υ	р	Phys. data, remarks
3.0017	Н	H CH₂OC	H ₂ CH ₂ CI	Н		CH ₂		
3.0018	Н	H CH₂OC	H₂CF₃	Н	F			
3.0019	Н	H CH₂OC	H₂CF₃	Н		CH₂		
3.0020	Н	H CH₂OC	:H₂CF₃	Н		CH₂		
_3.0021	_H_	H CH₂OC	CH ₂ CH=CH ₂	H_		CH ₂		
3.0022	Н	H CH₂OC	CH ₂ CH=CH ₂	Н		CH ₂		
3.0023	Н	H CH₂OC	CH ₂ CH=CH ₂	Н		CH ₂		
3.0024	Н	H CH ₂ O(CO)CH₃	Н		CH ₂		
3.0025	Н	H CH₂O(CO)CH₃	Н		CH ₂		
3.0026	Н	H CH₂O(CO)CH₃	Н		CH₂		
3.0027	Н	H CH₂O	CH ₂ C≡CH	Н		CH₂		
3.0028	Н	_	CH₂C≅CH	Н		CH ₂		
3.0029	Н	H CH ₂ O(CH₂C≡CH	Н		CH ₂		
3.0030	Н	H CH ₂ O	CH₂C≡CCH₃	Н	F			
3.0031	Н	H CH₂O	CH₂C≡CCH₃	Н		CH₂		
3.0032	Н	H CH ₂ O	CH₂C≡CCH₃	Н		CH ₂		
3.0033	Н	H	CH ₂ N N O	н	F	CH₂	. 0	
3.0034	Н	Н	CH ₂ N N O	Н	С	I CH	2 0	
3.0035	Н	Н	CH ₂ N N	Н	ŀ	I CH	2 0	
3.0036	. Н	Н	CH ₂ O	Н	F	₹ CH	2 0	
3.0037	' H	Н	CH ₂ OOO	H		CI CH	l ₂ 0	

No.	R ₁	R₂	Z ₁	R ₃₀		Υ	р	Phys. data, remarks
3.0038	Н	H	CH ₂ O O	Н	Н	CH ₂	0	
3.0039	Н	Н	CH ₂	Н	F	CH ₂	0	
3.0040	Н	Н	CH ₂	Н	CI	CH₂	0	·
3.0041	н	Н	CH ₂	Н	Н	CH₂	0	
3.0042	Н	Н	CH ₂ OCH ₂	Н	F	CH ₂	0	
3.0043	Н	Н	CH ₂ OCH ₂ OC	Н	CI	CH ₂	0	
3.0044	Н	Н	CH ₂ OCH ₂	Н	Н	CH ₂	0	
3.0045	Н	Н	CH ₂ O	Н	F	CH₂	0	
3.0046	Н	Н	CH ₂ O	Н	CI	CH ₂	0	
3.0047	Н	н	CH ₂ O	Н	Н	CH ₂	2 0	
3.0048	Н	н	CH ₂ O O	Н	F	CH;	2 0	
3.0049	Н	Н	CH ₂ O O	Н	С	I CH	2 0	
3.0050	Н	н	CH ₂ O O	Н	Н	СН	2 0	
3.0051	СН₃	CH₃	3 CH2OCH2CH2OCH3	Н	F	СН	2 0	
3.0052			CH2OCH2CH2OCH3	Н	С	I CH	2 0	
3.0053	CH₃	CH	3 CH2OCH2CH2OCH3	Н	1	I CH	2 0	
3.0054	CH₃	CH ₂	3 CH2OCH2CH2OCH2CH3	Н	F	CH	0	

No.	R₁	R ₂		Z ₁	R ₃₀	X	Υ	р	Phys. data, remarks
3.0055	CH₃	CH₃	CH₂OCH	₂ CH ₂ OCH ₂ CH ₃	Н	CI	CH₂	0	
3.0056	CH₃	CH₃	CH ₂ OCH	₂ CH ₂ OCH ₂ CH ₃	Н	Н	CH₂	0	
3.0057	CH₃	CH₃	CH₂N(Cl	l₃)SO₂CH₃	Н	F	CH ₂	0	
3.0058	CH₃	CH₃	CH₂N(Cl	H₃)SO₂CH₃	Н	Cl	CH₂	0	
3.0059	_CH₃	CH₃	CH₂N(CI	H₃)SO₂CH₃	H	<u>H</u>	CH ₂	0	
3.0060	CH₃	CH₃	CH ₂ OCH	l₂Ph	Н	F	CH ₂	0	
3.0061	CH	CH ₃	CH ₂ OCH	l₂Ph	H	CI	CH_2	0	
3.0062	CH	CH	CH ₂ OCH	l₂Ph	Н	Н	CH ₂	0	
3.0063	CH	CH	GH₂OCH	I ₂ CH ₂ OH	Н	F	CH ₂	0	
3.0064	CH	CH	GH ₂ OCH	I₂CH₂OH	Н	CI	CH ₂	0	
3.0065	CH	CH:	3 CH2OCH	I₂CH₂OH	Н	Н	CH ₂	0	
3.0066	CH	CH:	3 CH2OCH	H₂CH₂CI	Н	F	CH ₂	0	
3.0067	СН	CH	3 CH2OCI	H ₂ CH ₂ CI	Н	CI	CH₂	0	
3.0068	СН	₃ CH	3 CH2OCI	H₂CH₂ CI	Н	Н	CH₂	0	
3.0069	СН	₃ CH	3 CH2OCI	H₂CF₃	Н	F	CH ₂	0	
3.0070	СН	₃ CH	3 CH2OCI	H₂CF₃	Н	CI	CH ₂	0	
3.0071	СН	₃ СН	3 CH2OC	H₂CF₃	Н	Н	CH ₂	0	
3.0072	СН	3 CH	3 CH2OC	H ₂ CH=CH ₂	Н	F	CH ₂	0	
3.0073	CH	₃ CH	I ₃ CH ₂ OC	H ₂ CH=CH ₂	Н	CI	CH ₂	0	
3.0074	CH	ß CH	I₃ CH₂OC	H ₂ CH=CH ₂	Н	Н	CH ₂	0	
3.0075	CH	l₃ CH	13 CH2O(C	O)CH₃	Н	F	CH ₂	2 0	
3.0076	Ch	l₃ CH	I ₃ CH ₂ O(0	CO)CH₃	Н	C	CH ₂	2 0	
3.0077	' Ch	l ₃ Ch	I₃ CH₂O(C	CO)CH₃	Н	Н	CH	2 0	
3.0078	3 CH	l₃ C⊦	I₃ CH₂OC	H₂C≡CH	Н		CH		
3.0079	CH	l₃ Ch	H₃ CH₂OC	H₂C≡CH	H	С	I CH	2 0	
3.0080	CH	l₃ Ch	H₃ CH₂OC	H₂C≡CH	Н	Н	CH	2 0	
3.008				H ₂ C≡CCH ₃	Н		CH		
3.0082	2 Cł	H₃ Cł	H₃ CH₂OC	H ₂ C≡CCH ₃	H	С	I CH	2 0	
3.008	3 CI	H₃ Cł		H₂C≡CCH₃	Н		I CH		
3.0084	4 CI	H₃ Cł	H₃ C	H ₂ N N	Н	F	: CH	2 0	

No.	R ₁	R ₂	Z ₁	R ₃₀	X	Υ	р	Phys. data, remarks
3.0085	СН₃	CH₃	CH ₂ N N	Н	Cl	CH₂	0	
3.0086	CH ₃	CH₃	CH ₂ N N	H 	H 	CH₂	0	
3.0087	CH₃	CH₃	N-N CH ₃ O	Н.	F	CH₂	0	
3.0088	CH₃	CH₃	CH ₂ O	н	CI	CH ₂	0	
3.0089	CH ₃	CH ₃	CH ₂ O	н	Н	CH₂	0	
3.0090	CH	CH₃	CH ₂	Н	F	CH₂	0	
3.0091	CH:	3 CH₃	CH ₂	Н	CI	CH ₂	. 0	
3.0092	CH:	₃ CH₃	CH ₂	Н	H	CH₂	0	
3.0093	СН	3 CH ₃	CH ₂ OCH ₂ OO	Н	F	CH ₂	2 0	
3.0094	СН	3 CH3	CH ₂ OCH ₂ OO	Н	С	CH;	2 0	
3.0095	СН	₃ CH₃	CH ₂ OCH ₂ OO	Н	Н	CH	2 0	
3.0096	CH	3 CH ₃	CH ₂ O CO	Н	F	CH	2 0	
3.0097	CH	l₃ CH₃	CH₂O CO	н	С	I CH	2 0	

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No.	R₁	R ₂	Z ₁	R ₃₀	Х	Υ	p	Phys. data, remarks
3.0098	CH₃	CH₃	CH ₂ O O	Н	Н	CH₂	0	
3.0099	CH₃	CH₃	CH₂O O	Н	F	CH₂	0	
3.0100	CH₃	CH₃	CH ₂ O O	H	CI	CH₂	0	
3.0101	СН₃	CH ₃	CH ₂ O O	Н	Н	CH ₂	0	
3.0102	Н	CH ₃	CH2OCH2CH2OCH3	Н	F	CH ₂	0	
3.0103	Н	CH ₃	CH₂OCH₂CH₂OCH₃	Н	CI	CH ₂	0	
3.0104	Н	CH₃	CH₂OCH₂CH₂OCH₃	Н	Н	CH ₂	0	
3.0105	Н	CH₃	CH₂OCH₂CH₂OCH₂CH₃	Н		CH ₂		
3.0106	Н	CH₃	CH2OCH2CH2OCH2CH3	Н	CI	CH ₂	0	
3.0107	Н	CH₃	CH2OCH2CH2OCH2CH3	Н	Н	CH ₂	0	
3.0108	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н		CH ₂		
3.0109	Н	CH₃	CH ₂ N(CH ₃)SO ₂ CH ₃	Н		CH ₂		
3.0110	Н	CH₃	CH₂N(CH₃)SO₂CH₃	Н	Н	_		
3.0111	Н	CH₃	CH ₂ OCH ₂ Ph	Н	F	CH ₂		
3.0112	Н	CH₃	CH₂OCH₂Ph	Н		CH₂		
3.0113	Н	-	CH₂OCH₂Ph	Н	Н	_		
3.0114	Н		CH ₂ OCH ₂ CH ₂ OH	Н	F	_		
3.0115	Н		CH ₂ OCH ₂ CH ₂ OH	Н		CH ₂		
3.0116	Н	_	CH2OCH2CH2OH	Н		CH ₂		•
3.0117	Н	_	3 CH2OCH2CH2CI	Н	F	_		
3.0118		_	3 CH2OCH2CH2 CI	Н		I CH ₂		
3.0119	Н		3 CH2OCH2CH2 CI	Н	H	_		
3.0120	Н		3 CH2OCH2CF3	Н	F	_		
3.0121	H		3 CH2OCH2CF3	Н		I CH		
3.0122	Н		3 CH2OCH2CF3	Н		i CH		
3.0123			3 CH2OCH2CH=CH2	Н		CH		
3.0124	Н	CH	₃ CH ₂ OCH ₂ CH=CH ₂	Н	С	I CH	2 0	

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Υ	p	Phys. data, remarks
3.0125	Н	CH₃ CH₂	OCH ₂ CH=CH ₂	Н	Н	CH ₂	0	
3.0126	Н	CH ₃ CH ₂	O(CO)CH₃	Н	F	CH ₂	0	
3.0127	Н	CH ₃ CH ₂	O(CO)CH ₃	Н	CI	CH ₂	0	
3.0128	Н	CH ₃ CH ₂	O(CO)CH ₃	Н	Н	CH ₂	0	
3.0129	_H_	CH ₃ CH ₂	OCH₂C≡CH	<u>H</u> _	F.	CH ₂	0	-
3.0130	Н	CH ₃ CH ₂	OCH₂C≡CH	Н	CI	CH ₂	0	
3.0131	Н	CH₃ CH₂	OCH₂C≣CH	Н	Н	CH₂	0	
3.0132	Н	CH ₃ CH ₂	2OCH2C≣CCH3	Н	F	CH₂	0	
3.0133	Н	CH ₃ CH ₂	2OCH2C≣CCH3	Н		CH ₂		
3.0134	Н	CH₃ CH	2OCH2C≡CCH3	Н		CH ₂		
3.0135	Н	CH ₃	FN _N	Н	F	CH₂	0	
			CH ₂ NNN					
2 0126	Н	CH₃	—N	Н	CI	CH₂	0	
3.0136	п	O1 13	N N-	• •	•	J. 12		
			CH ₂					
3.0137	Н	СН₃	EN	Н	Н	CH ₂	0	
			CH N N-					
			O O					
3.0138	н	CH₃	/	Н	F	CH ₂	0	
2,2,7,2			N-N					
			CH ₂ OOO					
3.0139	Н	СН₃	- / ·	н	С	CH;	2 0	
0.0100	• • •	 3	N-N			•	-	
			CH ₂ OOO					
3.0140	Н	CH₃	,	Н	ŀ	I CH	2 0	
		-	N-N					
			CH ₂ OOO					
3.0141	Н	I CH₃	CH ₂	Н	F	- CH	2 0	
			- 0					
3.0142	. -	I CH₃	CH ₂	Н	C	н СН	2 0	
			`ó					

No.	R ₁	R ₂	Z ₁	R ₃₀ X Y p Phys. data, remarks
3.0143	Н	CH₃	CH ₂	H H CH₂ 0
3.0144	н	СН₃	O CH ₂ OCH ₂	H F CH₂ 0
3.0145	Н	CH₃	CH ₂ OCH ₂	H CI CH₂ 0
			Ŏ	•
3.0146	Н	CH ₃	CH ₂ OCH ₂ OO	H H CH₂ 0
3.0147	Н	CH₃	CH ₂ O	H F CH ₂ 0
3.0148	Н	СН₃	CH ₂ O	H CI CH₂ 0
3.0149	н	CH ₃	CH ₂ O	H H CH ₂ 0
3.0150	Н	CH₃	CH ₂ O O	H F CH ₂ 0
3.0151	н	CH₃	CH ₂ O O	H CI CH ₂ 0
3.0152 ·	: Н	CH₃	_	H H CH₂ 0
3.0153	3 H	Н	CH₂OCH₂CH₂OCH₃	CH ₃ F CH ₂ 0
3.0154	t H	Н	CH2OCH2CH2OCH3	CH ₃ CI CH ₂ 0
3.015	5 H	Н	CH2OCH2CH2OCH3	CH₃ H CH₂ 0
3.015	6 H	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	CH ₃ F CH ₂ 0
3.015	7 H	Н	CH2OCH2CH2OCH2CH3	CH₃ CI CH₂ 0
3.015	8 -	I H	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	CH ₃ H CH ₂ 0 ·
3.015	9 F	н н	CH ₂ N(CH ₃)SO ₂ CH ₃	CH ₃ F CH ₂ 0
3.016	0 F	н н	CH ₂ N(CH ₃)SO ₂ CH ₃	CH ₃ CI CH ₂ 0
3.016	1 H	, H	CH₂N(CH₃)SO₂CH₃	CH₃ H CH₂ 0
3.016	2 F	н н	CH₂OCH₂Ph	CH ₃ F CH ₂ 0
3.016	3 . F	H H	CH₂OCH₂Ph	CH₃ CI CH₂ 0

		·	
No.	R ₁	R_2 Z_1	R ₃₀ X Y p Phys. data, remarks
3.0164	Н	H CH ₂ OCH ₂ Ph	CH₃ H CH₂ 0
3.0165	Н	H CH₂OCH₂CH₂OH	CH₃ F CH₂ 0
3.0166	Н	H CH2OCH2CH2OH	CH₃ Ci CH₂ 0
3.0167	Н	H CH2OCH2CH2OH	CH ₃ H CH ₂ 0
3.0168	Н	H CH2OCH2CH2CI	CH ₃ F CH ₂ 0
3.0169	Н	H CH ₂ OCH ₂ CH ₂ CI	CH₃ CI CH₂ 0
3.0170	Н	H CH ₂ OCH ₂ CH ₂ CI	CH₃ H CH₂ 0
3.0171	Н	H CH ₂ OCH ₂ CF ₃	CH₃ F CH₂ 0
3.0172	Н	H CH2OCH2CF3	CH₃ CI CH₂ 0
3.0173	Н	H CH2OCH2CF3	CH₃ H CH₂ 0
3.0174	Н	H CH2OCH2CH=CH2	CH ₃ F CH ₂ 0
3.0175	Н	H CH ₂ OCH ₂ CH=CH ₂	CH₃ CI CH₂ 0
3.0176	Н	H CH2OCH2CH=CH2	CH ₃ H CH ₂ 0
3.0177	Н	H CH ₂ O(CO)CH ₃	CH ₃ F CH ₂ 0
3.0178	Н	H CH ₂ O(CO)CH ₃	CH₃ CI CH₂ 0
3.0179	Н	H CH ₂ O(CO)CH ₃	CH ₃ H CH ₂ 0
3.0180	Н	H CH2OCH2C≡CH	CH ₃ F CH ₂ 0
3.0181	Н	H CH2OCH2C≡CH	CH ₃ CI CH ₂ 0
3.0182	Н	H CH2OCH2C≡CH	CH ₃ H CH ₂ 0
3.0183	Н	H CH ₂ OCH ₂ C≡CCH ₃	CH ₃ F CH ₂ 0
3.0184	Н	H CH ₂ OCH ₂ C≡CCH ₃	CH ₃ CI CH ₂ 0
3.0185	Н	H CH2OCH2C≡CCH3	CH₃ H CH₂ 0
3.0186	Н	H N N-	CH₃ F CH₂ 0
		CH ₂	
3.0187	Н	H _N	CH ₃ CI CH ₂ 0
		H CH ₂ N N O	
3.0188	в н	_	
		H CH ₂ N N	-
		Ö	

No.	R₁	R ₂	Z ₁	R ₃₀ X Y p	Phys. data, remarks
3.0189	Н	Н	CH ₂ OOO	CH₃ F CH₂ 0	
3.0190	Н	Н	N-N	CH ₃ CI CH ₂ 0	
3.0191	н	н	CH ₂ OOO	CH₃ H CH₂ 0	
3.0192	Н	Н	CH ₂	CH ₃ F CH ₂ 0	
3.0193	Н.	.Н	CH ₂	CH₃ CI CH₂ 0	
3.0194	Н	Н	CH ₂	CH₃ H CH₂ 0	
3.0195	Н	Н	CH ₂ OCH ₂	CH ₃ F CH ₂ 0	
3.0196	Н	Н	CH ₂ OCH ₂	CH₃ CI CH₂ 0	
3.0197	Н	Н	CH ₂ OCH ₂	CH₃ H CH₂ 0	*
3.0198	Н	н	CH ₂ O	CH₃ F CH₂ 0	
3.0199	Н	H	CH₂O CH₂O	CH₃ Cl CH₂ 0	
3.0200	Н	Н	CH ₂ O	CH₃ H CH₂ 0	
3.0201	Н	Н	CH ₂ O O	CH₃ F CH₂ 0	
3.0202	Н	Н	CH ₂ O O	CH₃ CI CH₂ 0	

No.	R₁	R ₂	Z ₁	R ₃₀	X	Υ	р	Phys. data, remarks
3.0203	Н	Н		CH₃	Н	CH ₂	0	
			CH,O O					
3 0204	CH ₂	CHa	° CH₂OCH₂CH₂OCH₃	CH₃	F	CH ₂	0	
			CH ₂ OCH ₂ CH ₂ OCH ₃			CH ₂		
	_		CH ₂ OCH ₂ CH ₂ OCH ₃	СН₃	··H	CH ₂	0	
			CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃					
				СН₃				
			CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	СН₃	Н	CH ₂	0	
			CH ₂ N(CH ₃)SO ₂ CH ₃			CH ₂		
			CH₂N(CH₃)SO₂CH₃	CH₃	CI	CH ₂	0	
3.0212	CH₃	CH₃	CH₂N(CH₃)SO₂CH₃	CH₃	Н	CH ₂	0	
			CH₂OCH₂Ph	CH₃	F	CH ₂	0	
3.0214	CH₃	CH₃	CH₂OCH₂Ph	CH₃	CI	CH₂	0	·
3.0215	CHa	CH ₃	CH₂OCH₂Ph	CH₃	Н	CH ₂	0	
3.0216	CH	CH ₃	CH2OCH2CH2OH	CH₃	F	CH ₂	0	
3.0217	CH	CH ₃	3 CH2OCH2CH2OH	CH₃	CI	CH ₂	0	
3.0218	CH:	₃ CH ₃	3 CH2OCH2CH2OH	CH₃	Н	CH₂	0	
3.0219	CH:	3 CH	3 CH2OCH2CH2CI	CH	F	CH₂	0	
3.0220	CH	3 CH	3 CH2OCH2CH2 CI	CH	C	CH ₂	0	
3.0221	СН	3 CH	3 CH2OCH2CH2 CI	CH	, н	CH ₂	2 0	
3.0222	CH	3 CH	₃ CH₂OCH₂CF₃	CH	F	CH	2 0	
3.0223	CH	3 CH	₃ CH₂OCH₂CF₃	CH	₃ C	CH ₂	2 0	
3.0224	СН	₃ CH	₃ CH₂OCH₂CF₃	CH	3 H	CH;	2 0	
3.0225	CH	₃ CH	3 CH2OCH2CH=CH2	CH	₃ F	CH	2 0	
3.0226	CH	l₃ CH	3 CH2OCH2CH=CH2	СН	₃ C	I CH	2 0	
3.0227	7 CH	l₃ CH	3 CH2OCH2CH=CH2	СН	₃ H	I CH	2 0	
3.0228	3 CH	I₃ CH	₃ CH ₂ O(CO)CH ₃			CH		
3.0229	OF	I₃ CH	I₃ CH₂O(CO)CH₃	СН	3 C	I CH	2 0	
3.0230	CH	I ₃ CH	I₃ CH₂O(CO)CH₃	CH	3 F	I CH	2 0	
3.023	1 CH	l₃ CF	I₃ CH₂OCH₂C≡CH	CH	3 F	CH	2 0	
3.023	2 CH	l₃ C⊦	I ₃ CH ₂ OCH ₂ C≡CH		-	I CH		
3.023	3 CH	13 CH	I₃ CH₂OCH₂C≣CH	CH	l ₃	1 CH	0 0	

No.	R ₁	R ₂	Z ₁	R ₃₀	Х	Y	р	Phys. data, remarks
3.0234	CH₃	CH₃	CH ₂ OCH ₂ C≡CCH ₃	CH₃	F	CH₂	0	
3.0235	CH₃	CH₃	CH₂OCH₂C≡CCH₃	CH₃	CI	CH ₂	0	
3.0236	CH₃	CH₃	CH₂OCH₂C≡CCH₃	CH₃	Н	CH₂	0	
3.0237	CH ₃	, CH₃	CH ₂ N N	CH₃	F	CH ₂	0	
			CH ₂		•		-	
3.0238	CH	₃ CH₃	CH ₂ N N	CH₃	Cl	CH₂	0	
3.0239	СН	3 CH3	CH ₂ N N	CH₃	Н	CH ₂	0	
3.0240	СН	₃ CH:	0	СН₃	F	CH₂	0	
3.0241	СН	l₃ CH	N-N	CH₃	, Ci	CH ₂	. 0	
3.0242	? C⊦	I₃ CH	CH ₂ OOOO	СН	, Н	CH ₂	2 0	
3.0243	3 CH	H₃ CH		СН	₃ F	CH;	2 0	
3.024	4 Cł	H₃ C⊩	I ₃ CH ₂ O	СН	₃ С	I CH	2 0	
3.024	5 CI	H₃ C⊦	H ₃ CH ₂	СН	₃	I CH	2 0	
3.024	6 CI	H₃ CH	H ₃ CH ₂ OCH ₂	СН	3 F	: CH	2 0	
3.024	7 C	H₃ Cŀ	H ₃ CH ₂ OCH ₂	СН	l₃ C	I CH	0 0	

No.	R ₁	R ₂	Z ₁	R ₃₀	X	Υ	р	Phys. data, remarks
3.0248	CH₃	CH₃	CH ₂ OCH ₂	CH₃	Н	CH ₂	0	
3.0249	CH₃	CH ₃	CH ₂ O	CH₃	F	CH₂	0	
3.0250_	_CH₃-	_CH₃_	CH ₂ O O	CH ₃	CI	CH₂	0	<u>.</u>
3.0251	CH ₃	CH₃	CH ₂ O	CH₃	Н	CH ₂	0	
3.0252	CH₃	CH₃	CH,O O	CH₃	F	CH₂	0	
3.0253	СН₃	CH₃	CH ₂ O O	CH₃	Cl	CH ₂	0	
3.0254	CH₃	СН₃	CH ₂ O O	СН₃	Н	CH ₂	0	
3.0255	Н	СН₃	CH₂OCH₂CH₂OCH₃	CH₃	F	CH ₂	0	
3.0256	Н	CH₃	CH₂OCH₂CH₂OCH₃	CH ₃	CI	CH ₂	0	
3.0257	Н	СН₃	CH2OCH2CH2OCH3	CH₃	Н	CH ₂	0	
3.0258	Н	CH₃	CH2OCH2CH2OCH2CH3	CH₃	F	CH₂	0	
3.0259	Н	CH₃	CH2OCH2CH2OCH2CH3	CHs	CI	CH ₂	0	
3.0260	Н	CH₃	CH2OCH2CH2OCH2CH3	CH ₃	, Н	CH ₂	0	
3.0261	Н	CH3	CH ₂ N(CH ₃)SO ₂ CH ₃	CH	F	CH ₂	0	
3.0262	Н	CH	CH ₂ N(CH ₃)SO ₂ CH ₃	CH	C	CH ₂	0	
3.0263	Н	CH	CH ₂ N(CH ₃)SO ₂ CH ₃	CH	3 H	CH ₂	2 0	
3.0264	Н	CH:	3 CH₂OCH₂Ph	CH:	3 F	CH ₂	2 0	
3.0265	Н	CH:	3 CH2OCH2Ph	CH:	з С	I CH	2 0	
3.0266	Н	CH:	₃ CH₂OCH₂Ph	CH	₃ H	CH	2 0	
3.0267	' Н	CH	3 CH2OCH2CH2OH	CH	3 F	CH	2 0	
3.0268	в н	CH	3 CH2OCH2CH2OH	CH	3 C	I CH	2 0	
3.0269	Э Н	CH	3 CH2OCH2CH2OH	СН	3 F	СН	2 0	
3.0270) Н	СН	3 CH2OCH2CH2CI	СН	3 F	СН	2 0	
3.027	ı H	СН	3 CH2OCH2CH2 CI	СН	3 C	I CH	2 0	

No.	R₁	R_2 Z_1	R ₃₀ X Y p Phys. data, remarks
.0272	Н	CH ₃ CH ₂ OCH ₂ CH ₂ CI	CH₃ H CH₂ 0
3.0273 _%	Н	CH ₃ CH ₂ OCH ₂ CF ₃	CH₃ F CH₂ 0
3.0274	Н	CH ₃ CH ₂ OCH ₂ CF ₃	CH₃ CI CH₂ 0
3.0275	Н	CH ₃ CH ₂ OCH ₂ CF ₃	CH₃ H CH₂ 0
3.0276_	_H_	CH ₃ CH ₂ OCH ₂ CH=CH ₂	
3.0277	Н	CH ₃ CH ₂ OCH ₂ CH=CH ₂	CH₃ Cl CH₂ 0
3.0278	Н	CH ₃ CH ₂ OCH ₂ CH=CH ₂	
3.0279	Н	CH₃ CH₂O(CO)CH₃	CH₃ F CH₂ 0
3.0280	Н	CH₃ CH₂O(CO)CH₃	CH ₃ Cl CH ₂ 0
3.0281	Н	CH₃ CH₂O(CO)CH₃	CH₃ H CH₂ 0
3.0282	Н	CH₃ CH₂OCH₂C≡CH	CH₃ F CH₂ 0
3.0283	Н	CH₃ CH₂OCH₂C≡CH	CH ₃ CI CH ₂ 0
3.0284	Н	CH₃ CH₂OCH₂C≡CH	CH ₃ H CH ₂ 0
3.0285	Н	CH₃ CH₂OCH₂C≡CCH₃	
3.0286	Н	CH ₃ CH ₂ OCH ₂ C≡CCH ₃	
3.0287	Н	CH ₃ CH ₂ OCH ₂ C≡CCH ₃	CH ₃ H CH ₂ 0
3.0288	Н	CH ₃	CH₃ F CH₂ 0
3.0289	Н	CH ₃ CH ₂ N N	CH₃ CI CH₂ 0
3.0290	Н	CH ₃	CH₃ H CH₂ 0
3.0291	Н	CH₃ N-N CH₂ O	CH₃ F CH₂ 0
3.0292	Н	CH ₃	CH₃ CI CH₂ 0

No.	R₁	R ₂	Z ₁		`		p	Phys. data, remarks
3.0293	Н	CH₃	CH ₂ OOO	CH₃ F	i C	H ₂	0	-
3.0294	Н	CH ₃	CH ₂	CH₃ F	- C	H ₂	0	
3.0295	H	CH ₃	CH ₂	CH₃ C) C	H ₂	0	
3.0296	Н	CH ₃	CH ₂	CH₃ ŀ	H C	H₂	0	
3.0297	Н	CH₃	CH ₂ OCH ₂	CH₃ I	= C	CH ₂	0	
3.0298	Н	CH₃	CH ₂ OCH ₂	CH₃ (CI C	CH₂	0	
3.0299	Н	CH₃	CH ₂ OCH ₂	CH₃ I	-l C	CH ₂	0	
3.0300	Н	CH ₃	CH ₂ O	CH ₃	FC	CH₂	0	
3.0301	Н	СН₃	CH ₂ O ✓O	CH ₃	CI (CH₂	0	
3.0302	Н	CH₃	CH ₂ O	CH₃	H (CH₂	0	
3.0303	Н	CH₃	CH ₂ O O	СН₃	F	CH₂	0	
3.0304	Н	CH₃		СН₃	CI (CH₂	0	
3.0305	Н	CH₃	_	CH₃	Н	CH₂	0	
3.0306	Н	Н	CH₂OCH₂CH₂OCH₃	CH₃	F	CH ₂	1	
3.0307	Н	Н	CH2OCH2CH2OCH3	CH₃	CI	CH₂	1	
3.0308	Н	Н		CH₃	Н	CH₂	1	
3.0309	Н	Н	CH2OCH2CH2OCH2CH3	CH₃	F	CH ₂	1	

						•
No.	R ₁	R ₂	Z ₁	R ₃₀ X Y	р	Phys. data, remarks
3.0310	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	CH ₃ CI CH ₂	1	
3.0311	Н	Н	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	CH ₃ H CH ₂	1	
3.0312	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	CH ₃ F CH ₂	1	
3.0313	Н	Н	CH ₂ N(CH ₃)SO ₂ CH ₃	CH ₃ CI CH ₂	1	
3.0314	_H_	_H_	CH ₂ N(CH ₃)SO ₂ CH ₃	CH ₃ H CH ₂	1	
3.0315	Н	Н	CH₂OCH₂Ph	CH ₃ F CH ₂	1	
3.0316	Н	Н	CH₂OCH₂Ph	CH₃ CI CH₂	1	
3.0317	Н	Н	CH₂OCH₂Ph	CH ₃ H CH ₂	1	
3.0318	Н	Н	CH ₂ OCH ₂ CH ₂ OH	CH ₃ F CH ₂	1	·
3.0319	Н	Н	CH₂OCH₂CH₂OH	CH ₃ Cl CH ₂	1	
3.0320	Н	Н	CH ₂ OCH ₂ CH ₂ OH	CH₃ H CH₂	1	
3.0321	. Н	Н	CH ₂ OCH ₂ CH ₂ Cl	CH₃ F CH₂	1	
3.0322	Н	Н	CH ₂ OCH ₂ CH ₂ CI	CH₃ CI CH₂	1	
3.0323	Н	Н	CH ₂ OCH ₂ CH ₂ CI	CH₃ H CH₂	1	
3.0324	Н	Н	CH₂OCH₂CF₃	CH₃ F CH₂	1	
3.0325	Н	Н	CH₂OCH₂CF₃	CH ₃ CI CH ₂	1	
3.0326	Н	Н	CH₂OCH₂CF₃	CH ₃ H CH ₂	2 1	
3.0327	Н	Н	CH ₂ OCH ₂ CH=CH ₂	CH ₃ F CH ₂	2 1	
3.0328	Н	Н	CH ₂ OCH ₂ CH=CH ₂	CH3 CI CH	2 1	
3.0329	Н	Н	CH ₂ OCH ₂ CH=CH ₂	CH₃ H CH	2 1	
3.0330	Н	Н	CH ₂ O(CO)CH ₃	CH₃ F CH	2 1	
3.0331	Н	Н	CH ₂ O(CO)CH ₃	CH₃ CI CH		
3.0332	Н	Н	I CH₂O(CO)CH₃	CH₃ H CH		
3.0333	Н	H	I CH₂OCH₂C≡CH	CH₃ F CH		
3.0334	Н	ŀ	H CH₂OCH₂C≡CH	CH₃ CI CH		
3.0335	Н	۲	H CH2OCH2C≡CH	CH₃ H CH		
3.0336	Н	ŀ	H CH2OCH2C≡CCH3	CH₃ F CH		
3.0337	H	ŀ	H CH2OCH2C≡CCH3	CH₃ CI CH		
3.0338	3 H	ŀ	H CH2OCH2C≣CCH3	CH₃ H CH		
3.0339) H	i ł	CH ₂ NNN	CH₃ F CH	l ₂ 1	

No.	R₁	R ₂	Z ₁	R ₃₀ X Y p Phys. data, remarks
3.0340	Н	Н	CH ₂ N N O	CH₃ Cl CH₂ 1
3.0341	н	·H	CH ₂ N N N -	CH₃ H CH₂ 1
3.0342	Н	Н	N-N	CH ₃ F CH ₂ 1
3.0343	н	н	CH ₂ OOO	CH₃ CI CH₂ 1
3.0344	Н	Н	CH ₂ O	CH₃ H CH₂ 1
3.0345	Н	н	CH ₂	CH ₃ F CH ₂ 1
3.0346	Н	Н	CH ₂	CH ₃ Cl CH ₂ 1
3.0347	Н	Н	CH ₂	CH ₃ H CH ₂ 1
3.0348	Н	Н	CH ₂ OCH ₂	CH ₃ F CH ₂ 1
3.0349	Н	Н	CH ₂ OCH ₂ OO	CH ₃ Cl CH ₂ 1
3.0350	Н	Н	CH ₂ OCH ₂ OO	CH₃ H CH₂ 1
3.0351	Н	Н	CH ₂ O	CH ₃ F CH ₂ 1
3.0352	Н	Н	CH ₂ O O	CH₃ CI CH₂ 1

No.	R ₁	R ₂	Z ₁	R ₃₀	X	Υ	р	Phys. data, remarks
3.0353	Н	Н	_ 0	CH₃	Н	CH₂	1	
			CH ₂ O					
3.0354	Н	Н	\bigcap_{Ω}	CH₃	F	CH₂	1	·
			CH ₂ O					
3.0355	Н	Н		CH₃	CI	CH ₂	1	Y
			сн,о					
			ОП ₂ О	011		011	4	**
3.0356	Н	Н		CH ₃	н	CH ₂	1	
			CH ₂ O					
3.0357	CH₃	CH ₃	CH₂OCH₂CH₂OCH₃	CH₃	F	CH ₂	1	
3.0358	CH₃	CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₃	CH₃	Cl	CH ₂	1	
3.0359	CH ₃	CH ₃	CH ₂ OCH ₂ CH ₂ OCH ₃	CH₃	Н	CH ₂	1	
3.0360	CH₃	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	CH₃	F	CH₂	1	
3.0361	CH₃	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	CH₃	CI	CH₂	1	
3.0362	CH₃	CH₃	CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₃	-		CH₂		
3.0363			CH₂N(CH₃)SO₂CH₃			CH₂		
3.0364			CH ₂ N(CH ₃)SO ₂ CH ₃			CH₂		
3.0365			CH ₂ N(CH ₃)SO ₂ CH ₃			CH ₂		
3.0366			CH₂OCH₂Ph			CH₂		
3.0367			CH₂OCH₂Ph	_		CH₂		
3.0368			CH ₂ OCH ₂ Ph			CH ₂		
3.0369	_		CH ₂ OCH ₂ CH ₂ OH			CH₂		
	_	_	CH ₂ OCH ₂ CH ₂ OH			CH ₂		
3.0371			CH ₂ OCH ₂ CH ₂ OH	_		CH ₂ CH ₂		
			CH ₂ OCH ₂ CH ₂ CI				-	
			CH ₂ OCH ₂ CH ₂ CI CH ₂ OCH ₂ CH ₂ CI			CH ₂		
						CH ₂		
						CH ₂		
						CH ₂		
		_	CH ₂ OCH ₂ CH=CH ₂			CH		
			CH ₂ OCH ₂ CH=CH ₂			CH;		

No. R ₁ R ₂	Z ₁	R ₃₀	XY	р	Phys. data, remarks
3.0380 CH ₃ CH ₃ CH	₂ OCH ₂ CH=CH ₂	CH₃	H CH ₂	1	
3.0381 CH ₃ CH ₃ CH	₂ O(CO)CH₃	CH₃	F CH ₂	1	
3.0382 CH ₃ CH ₃ CH	₂ O(CO)CH ₃	CH₃ (CI CH2	1	
3.0383 CH₃ CH₃ CH	₂ O(CO)CH₃	CH₃	H CH₂	1	
3.0384 CH ₃ CH ₃ CH	₂ OCH ₂ C≡CH		F CH ₂		*
3.0385 CH₃ CH₃ CH	₂ OCH ₂ C≣CH	CH₃	CI CH ₂	1	
3.0386 CH₃ CH₃ CH	₂ OCH ₂ C≡CH	CH₃	H CH₂	1	
3.0387 CH ₃ CH ₃ CH	2OCH2C≣CCH3		F CH ₂		
3.0388 CH ₃ CH ₃ CH	l ₂ OCH ₂ C≡CCH ₃		CI CH₂		
3.0389 CH ₃ CH ₃ CH	I ₂ OCH ₂ C≡CCH ₃		H CH₂		
3.0390 CH₃ CH₃	CH ₂ N N	CH₃	F CH₂	. 1	
3.0391 CH ₃ CH ₃	CH ₂ N N O	CH ₃	CI CH ₂	1	
3.0392 CH ₃ CH ₃	CH ₂ N N O	CH ₃	H CH ₂	<u>,</u> 1	
3.0393 CH ₃ CH ₃	CH ₂ O	CH₃	F CH	2 1	
3.0394 CH ₃ CH ₃	CH ₂ O	CH₃	CI CH	2 1	
3.0395 CH₃ CH₃	CH ₂ OOO	CH₃	н сн	2 1	
3.0396 CH ₃ CH ₃	CH ₂	CH₃	F CH	l ₂ 1	
3.0397 CH₃ CH₃	CH ₂ O	CH₃	CI CH	l ₂ 1	

No.	R ₁	R ₂	Z ₁	R ₃₀ X			p	Phys. data, remarks
3.0398	CH₃	CH₃	CH ₂	CH₃ H	C	H ₂	1	
3.0399	СН₃	CH₃	CH ₂ OCH ₂	CH₃ F	C	:H₂	1	
3.0400	CH ₃	СН₃	CH ₂ OCH ₂	CH₃ C	l C	CH ₂	1	*
3.0401	CH₃	СН₃	CH ₂ OCH ₂	CH₃ H	C	CH ₂	1	
3.0402	CH₃	СН₃	сн,о	CH₃ F	•	CH ₂	1	
3.0403	CH₃	СН₃	CH ₂ O	CH₃ C	1 (CH ₂	1	
3.0404	CH₃	CH₃	CH ₂ O	CH₃ H	1 (CH₂	1	
3.0405	СН₃	CH₃	CH ₂ O O	CH₃ F	= (CH₂	1	
3.0406	СН₃	СН₃	CH ₂ O O	CH₃ C	el (CH₂	1	
3.0407	CH₃	СН₃	CH ₂ O O	CH₃ F	ተ (CH₂	1	
3.0408	Н	CH₃	CH₂OCH₂CH₂OCH₃	CH₃ F	= (CH₂	1	•
3.0409	Н	CH₃	CH2OCH2CH2OCH3	CH ₃ C	CI ·	CH₂	1	
3.0410	Н	СН₃	CH2OCH2CH2OCH3	CH₃ I	-1	CH₂	1	
3.0411	Н	СН₃	CH2OCH2CH2OCH2CH3	CH₃ I	F	CH₂	1	
3.0412	Н	СН₃	CH2OCH2CH2OCH2CH3	CH₃ (CI	CH₂	1	
3.0413	Н	СН₃	CH2OCH2CH2OCH2CH3	CH₃ I	H	CH₂	1	
3.0414	Н	СН₃	CH ₂ N(CH ₃)SO ₂ CH ₃	CH₃	F	CH₂	1	
3.0415	Н	CH₃	CH ₂ N(CH₃)SO ₂ CH₃	CH₃ (CI	CH ₂	1	
3.0416	Н	CH ₃	CH ₂ N(CH ₃)SO ₂ CH ₃	CH ₃	Н	CH ₂	1	
3.0417	Н	CH	CH₂OCH₂Ph	CH₃	F	CH ₂	1	
3.0418	Н	CH	, CH₂OCH₂Ph	CH₃ (CI	CH₂	1	

No.	R ₁	R_2 Z_1	R ₃₀ X Y	p Phys. data, remarks
3.0419	Н	CH₃ CH₂OCH₂Ph	CH₃ H CH₂	1
3.0420	Н	CH ₃ CH ₂ OCH ₂ CH ₂ OH	CH₃ F CH₂	1
3.0421	Н	CH₃ CH₂OCH₂CH₂OH	CH ₃ CI CH ₂	1
3.0422	Н	CH ₃ CH ₂ OCH ₂ CH ₂ OH	CH₃ H CH₂	1
3.0423	_H_	CH₃ CH₂OCH₂CH₂CI	CH₃ F CH₂	1 .
3.0424	Н	CH ₃ CH ₂ OCH ₂ CH ₂ CI	CH₃ CI CH₂	1
3.0425	Н	CH ₃ CH ₂ OCH ₂ CH ₂ CI	CH₃ H CH₂	1
3.0426	Н	CH₃ CH₂OCH₂CF₃	CH₃ F CH₂	1
3.0427	Н	CH₃ CH₂OCH₂CF₃	CH ₃ CI CH ₂	1 .
3.0428	Н	CH ₃ CH ₂ OCH ₂ CF ₃	CH ₃ H CH ₂	1
3.0429	Н	CH ₃ CH ₂ OCH ₂ CH=CH ₂	CH₃ F CH₂	1
3.0430	Н	CH ₃ CH ₂ OCH ₂ CH=CH ₂	CH₃ CI CH₂	1
3.0431	Н	CH ₃ CH ₂ OCH ₂ CH=CH ₂	CH₃ H CH₂	1
3.0432	Н	CH₃ CH₂O(CO)CH₃	CH₃ F CH₂	1 .
3.0433	Н	CH₃ CH₂O(CO)CH₃	CH ₃ CI CH ₂	1
3.0434	Н	CH₃ CH₂O(CO)CH₃	CH ₃ H CH ₂	1
3.0435	Н	CH₃ CH₂OCH₂C≡CH	CH ₃ F CH ₂	1
3.0436	Н	CH₃ CH₂OCH₂C≡CH	CH ₃ CI CH ₂	1
3.0437	Н	CH₃ CH₂OCH₂C≡CH	CH₃ H CH₂	1
3.0438	Н	CH ₃ CH ₂ OCH ₂ C≡CCH ₃	CH₃ F CH₂	1
3.0439	Н	CH ₃ CH ₂ OCH ₂ C≡CCH ₃	: CH ₃ CI CH ₂	1
3.0440	Н	CH ₃ CH ₂ OCH ₂ C≡CCH ₃	CH ₃ H CH ₂	1
3.0441	Н	CH ₃	CH₃ F CH₂	1
3.0442	Н	CH₃ CH₂ N N	CH₃ Cl CH₂	1
3.0443	Н	CH ₃	CH₃ H CH₂	1

No.	R₁	R ₂	Z ₁	R ₃₀ X Y p	Phys. data, remarks
3.0444	Н	CH₃	CH ₂ O O	CH₃ F CH₂ 1	
3.0445	Н	CH₃	N-N-O	CH ₃ CI CH ₂ 1	
3.0446	н	CH₃	CH ₂ OOO	CH₃ H CH₂ 1	
3.0447	Н	CH ₃	CH ₂	CH₃ F CH₂ 1	
3.0448	Н	CH ₃	CH ₂	CH₃ Cl CH₂ 1	
3.0449	Н	СН₃	CH ₂	CH₃ H CH₂ 1	
3.0450	Н	CH₃	CH₂OCH₂ O	CH₃ F CH₂ 1	
3.0451	Н	CH₃	CH ₂ OCH ₂	CH₃ Cl CH₂ 1	
3.0452	Н	CH₃	CH ₂ OCH ₂	CH₃ H CH₂ 1	
3.0453	Н	СН₃	CH ₂ O	CH₃ F CH₂ 1	
3.0454	Н	СН₃	CH₂O O	CH ₃ CI CH ₂ 1	
3.0455	Н	CH₃	CH ₂ O	CH₃ H CH₂ 1	
3.0456	Н	I CH₃	CH₂O O	CH₃ F CH₂ 1	
3.0457	ŀ	I CH₃	CH ₂ O O	CH₃ CI CH₂ 1	

No.	R₁	R ₂	Z ₁	R ₃₀	X	Υ	р	Phys. data, remarks
3.0458	Н	CH₃	CH ₂ O O	CH₃	Н	CH₂	1	

Table 4: Intermediates of formulae Da and Db:

No.	R₁	R ₂	R ₃	Y	Xa Physical data
4.0001	Н	Н	ОН	CH₂	H see Example P9; tautomeric form Da
4.0002	Н	Н	OCH₃	CH₂	Н
4.0003	Н	Н	OCH₂CH₃	CH₂	Н
4.0004	Н	Н	$OC(CH_3)_2$	CH ₂	н
4.0005	Н	Н	ОН	CH ₂ CH ₂	H see Example P12; tautomeric form Da
4.0006	Н	Н	OCH ₃	CH ₂ CH ₂	Н
4.0007	Н	Н	OCH₂CH₃	CH ₂ CH ₂	Н
4.0008	Н	Н	$OC(CH_3)_2$	CH₂CH₂	н
4.0009	Н	Н	ОН	0	H ¹ H NMR (300 MHz; CDCl ₃) δ 6.35 (s, 2H); 5.66 (s, 1H); 3.78 (d, 1H); 3.43 (d, 1H); tautomeric form Da
4.0010	Н	Н	OCH₃	0	H
4.0011	Н	Н	OCH₂CH₃	0	Н
4.0012	Н	Н	$OC(CH_3)_2$	0	Н
4.0013	В	Н	ОН	NSO₂CH₃	Н
4.0014	Н	Н	OCH₃	NSO₂CH₃	Н
4.0015	5 H	Н	OCH₂CH₃	NSO₂CH₃	Н
4.0016	з н	Н	$OC(CH_3)_2$	NSO₂CH₃	н
4.0017	7 H	Н	ОН	NC(O)C(CH ₃) ₃	н
4.0018	3 H	Н	OCH₃	NC(O)C(CH ₃) ₃	н
4.0019	э н	Н	OCH₂CH₃	NC(O)C(CH ₃) ₃	н
4.002	о н	Н	OC(CH ₃) ₂	NC(O)C(CH ₃) ₃	Н

No.	R ₁	R ₂	R ₃	Y	Xa Physical data
4.0021	Н	Н	ОН	CH ₂	CI
4.0022	Н	Н	OCH ₃	CH₂	CI
4.0023	Н	Н	OCH ₂ CH ₃	CH₂	CI
4.0024	Н	Н	$OC(CH_3)_2$	CH₂	CI
4.0025	_H_	_H_	OH	CH₂CH₂	Cl_see Preparation Example P11
4.0026	Н	Н	OCH₃	CH₂CH₂	CI
4.0027	Н	Н	OCH ₂ CH ₃	CH₂CH₂	CI
4.0028	Н	Н	$OC(CH_3)_2$	CH₂CH₂	CI
4.0029	Н	Н	OH	0	CI
4.0030	Н	Н	OCH₃	0	Cl
4.0031	Н	Н	OCH₂CH₃	0	CI
4.0032	H	Н	OC(CH ₃) ₂	0	CI
4.0033	3 H	Н	ОН	NSO₂CH₃	CI
4.0034	l H	Н	OCH ₃	NSO ₂ CH₃	Ci
4.0035	5 H	Н	OCH₂CH₃	NSO₂CH₃	Cl
4.0036	3 H	Н	$OC(CH_3)_2$	NSO ₂ CH₃	CI
4.0037	7 H	Н	OH	$NC(O)C(CH_3)_3$	CI
4.003	в Н	Н	OCH ₃	NC(O)C(CH ₃) ₃	CI
4.003	9 H	Н	OCH₂CH₃	NC(O)C(CH ₃) ₃	CI
4.004	0 H	Н	$OC(CH_3)_2$	NC(O)C(CH ₃) ₃	CI
4.004	1 H	Н	ОН	CH₂	Br
4.004	2 H	Н	OCH₃	CH₂	Br
4.004	3 H	Н	OCH ₂ CH ₃	CH ₂	Br
4.004	4 H	l H	OC(CH ₃) ₂	CH₂	Br
4.004	5 H	I H		CH₂CH₂	Br
4.004	6 F	i H		CH ₂ CH ₂	Br
4.004	7 F	1 1	OCH ₂ CH ₃	CH₂CH₂	Br
4.004	18 H	1 1-	I OC(CH ₃) ₂	CH₂CH₂	Br
4.004	19 F	1 F		0	Br
4.005	60 F	+ H		0	Br
4.005	51 F	1 1			Br
4.005	52 H	1 F	H OC(CH ₃) ₂	0	Br
4.00	53 H	1 F	H OH	NSO ₂ CH ₃	Br

No.	R₁	R ₂	R ₃	Y	Xa	Physical data
4.0054	Н	Н	OCH ₃	NSO₂CH₃	Br	
4.0055	Н	Н	OCH₂CH₃	NSO₂CH₃	Br	
4.0056	Н	Н	$OC(CH_3)_2$	NSO₂CH₃	Br	
4.0057	Н	Н	ОН	$NC(O)C(CH_3)_3$	Br	
4.0058_	H_	_H_	OCH ₃	NC(O)C(CH ₃) ₃	_Br	
4.0059	Н	Н	OCH ₂ CH ₃	$NC(O)C(CH_3)_3$	Br	
4.0060	Н	Н	$OC(CH_3)_2$	$NC(O)C(CH_3)_3$	Br	
4.0061	Н	CH₃	ОН	CH₂	Н	¹ H NMR (300 MHz; CDCl ₃) δ 6.30 (m, 1H); 6.10 (m, 1H); 3.73 (d, 1H); 3.44 (d, 1H); 1.62 (s, 3H); tautomeric form Db
4.0062	Н	CH₃	OCH ₃	CH ₂	Н	√.
4.0063	Н	CH₃	OCH ₂ CH ₃	CH ₂	Н	
4.0064	Н	CH ₃	OC(CH ₃) ₂	CH ₂	Н	
4.0065	Н	CH	OH	CH₂CH₂	Н	
4.0066	Н	CH	3 OCH₃	CH₂CH₂	Н	
4.0067	Н	CH	3 OCH2CH3	CH₂CH₂	Н	
4.0068	Н	CH:	3 OC(CH ₃) ₂	CH₂CH₂	Н	
4.0069	Н	CH	₃ OH	0	Н	
4.0070	Н	CH	3 OCH3	0	Н	
4.0071	Н	CH	3 OCH2CH3	0	Н	
4.0072	Н	CH	$_3$ OC(CH $_3$) $_2$	0	Н	
4.0073	Н	СН	3 OH	NSO₂CH₃	Н	
4.0074	Н	CH	3 OCH3	NSO₂CH₃	Н	
4.0075	Н	СН	3 OCH2CH3	NSO ₂ CH₃	Н	
4.0076	Н	СН	I_3 OC(CH $_3$) $_2$	NSO ₂ CH₃	Н	
4.0077	Н	·CH	l₃ OH	NC(O)C(CH ₃) ₃	ŀ	· ·
4.0078	Н	CH	I₃ OCH₃	NC(O)C(CH ₃) ₃	F	1
4.0079	Н	CH	I₃ OCH2CH3	NC(O)C(CH ₃) ₃	ŀ	1
4.0080	Н	CH	1 ₃ OC(CH ₃) ₂			
4.0081	Н	CH	l₃ OH	CH₂	C	
4.0082	: H			CH₂	C	
4.0083	В	CH	I₃ OCH2CH3		C	
4.0084	Н	CH	13 OC(CH3)2	CH ₂	C	

No.	R₁	R₂	R ₃	Υ	Xa Physical data
4.0085	Н	CH₃	ОН	CH₂CH₂	CI
4.0086	н	CH₃	OCH₃	CH₂CH₂	CI
4.0087	Н	CH₃ (OCH₂CH₃	CH₂CH₂	CI
4.0088	Н	CH₃ ¹	OC(CH ₃) ₂	CH₂CH₂	CI
4.0089	_H_	СН₃	ОН	0	CI
4.0090	Н	CH₃	OCH₃	0	CI
4.0091	Н	СН₃	OCH₂CH₃	0	CI
4.0092	Н	CH₃	OC(CH ₃) ₂	0	CI
4.0093	Н	CH₃	ОН	NSO₂CH₃	CI
4.0094	Н	СН₃	OCH₃	NSO₂CH₃	CI
4.0095	Н	СН₃	OCH₂CH₃	NSO₂CH₃	CI
4.0096	Н	CH₃	OC(CH ₃) ₂	NSO₂CH₃	CI
4.0097	Н	CH ₃	ОН	$NC(O)C(CH_3)_3$	CI
4.0098	Н	CH ₃	OCH₃	$NC(O)C(CH_3)_3$	CI
4.0099	Н	CH₃	OCH ₂ CH ₃	$NC(O)C(CH_3)_3$	CI
4.0100	Н	CH ₃	OC(CH ₃) ₂	$NC(O)C(CH_3)_3$	CI
4.0101	Н	CH ₃	OH	CH₂	Br
4.0102	Н	CH₃	OCH₃	CH ₂	Br
4.0103	Н	CH₃	OCH ₂ CH ₃	CH ₂	Br
4.0104	Н	CH₃	OC(CH ₃) ₂	CH₂	Br
4.0105	Н	CH₃	ОН	CH₂CH₂	Br
4.0106	В	CH₃	OCH ₃	CH₂CH₂	Br
4.0107	' H	CH₃	OCH ₂ CH ₃	CH₂CH₂	Br
4.0108	3 H	CH₃	OC(CH ₃) ₂	CH₂CH₂	Br
4.0109	ЭН	CH₃	ОН	Ο.	Br
4.0110	Э	CH₃	OCH₃	0	Br
4.011	1 H	CH ₃	OCH ₂ CH ₃	0	Br
4.0112	2 H	CH ₃	$OC(CH_3)_2$	0	Br
4.0113	3 H	I CH	OH	NSO₂CH₃	Br
4.0114	4 H	CH ₃	oCH₃	NSO₂CH₃	Br
4.011	5 H	CH:	OCH ₂ CH ₃	NSO₂CH₃	Br
4.011	6 H	I CH	3 OC(CH ₃) ₂	NSO₂CH₃	Br
4.011	7 H	I CH	_s OH	NC(O)C(CH ₃) ₃	Br

No. R ₁ R ₂	R ₃	Y	Xa Physical data
4.0118 H CH ₃	OCH₃	$NC(O)C(CH_3)_3$	Br
4.0119 H CH ₃ O	CH₂CH₃	$NC(O)C(CH_3)_3$	Br
4.0120 H CH₃ C	$C(CH_3)_2$	$NC(O)C(CH_3)_3$	Br
4.0121 CH ₃ CH ₃	ОН	CH ₂	Н
4.0122 CH ₃ CH ₃	OCH₃	CH₂	<u>_H</u> <u>, </u>
4.0123 CH ₃ CH ₃ C	CH₂CH₃	CH ₂	н
4.0124 CH ₃ CH ₃ C	$C(CH_3)_2$	CH ₂	Н
4.0125 CH ₃ CH ₃	ОН	CH ₂ CH ₂	н
4.0126 CH ₃ CH ₃	OCH₃	CH₂CH₂	Н
4.0127 CH ₃ CH ₃ C	OCH₂CH₃	CH₂CH₂	н
4.0128 CH ₃ CH ₃ C	OC(CH ₃) ₂	CH₂CH₂	н
4.0129 CH ₃ CH ₃	ОН	0	н
4.0130 CH ₃ CH ₃	OCH ₃	0	н
4.0131 CH ₃ CH ₃ C	OCH₂CH₃	0	н
4.0132 CH ₃ CH ₃ C	OC(CH ₃) ₂	0	H _.
4.0133 CH ₃ CH ₃	ОН	NSO₂CH₃	Н
4.0134 CH ₃ CH ₃	OCH₃	NSO₂CH₃	Н
4.0135 CH ₃ CH ₃ C	OCH₂CH₃	NSO₂CH₃	Н
4.0136 CH ₃ CH ₃ (OC(CH ₃) ₂	NSO₂CH₃	Н
4.0137 CH ₃ CH ₃	ОН	NC(O)C(CH ₃) ₃	Н
4.0138 CH ₃ CH ₃	OCH ₃	NC(O)C(CH ₃) ₃	Н
4.0139 CH ₃ CH ₃ C	OCH ₂ CH ₃	$NC(O)C(CH_3)_3$	Н
4.0140 CH ₃ CH ₃	$OC(CH_3)_2$	$NC(O)C(CH_3)_3$	Н
4.0141 CH ₃ CH ₃	ОН	CH₂	CI
4.0142 CH ₃ CH ₃	OCH₃	CH₂	CI see Preparation Example P3
4.0143 CH ₃ CH ₃	OCH ₂ CH ₃	CH₂	CI
4.0144 CH ₃ CH ₃	OC(CH ₃) ₂	CH₂	CI
4.0145 CH ₃ CH ₃	ОН	CH₂CH₂	CI
4.0146 CH ₃ CH ₃	OCH₃	CH₂CH₂	CI
4.0147 CH ₃ CH ₃	OCH₂CH₃	CH₂CH₂	CI
4.0148 CH ₃ CH ₃	OC(CH ₃) ₂	CH₂CH₂	CI
4.0149 CH ₃ CH ₃	ОН	0	CI
4.0150 CH ₃ CH ₃	OCH ₃	0	CI

No. R ₁ R ₂	R ₃ Y	Xa Physical data
4.0151 CH ₃ CH ₃ OCH		Cl
4.0152 CH ₃ CH ₃ OC	_	CI
	OH NSO ₂ CH ₃	CI
4.0154 CH ₃ CH ₃ O		CI
4.0155 CH ₃ CH ₃ OC		CI
4.0156 CH ₃ CH ₃ OC		CI
4.0157 CH ₃ CH ₃	OH NC(O)C(CH ₃)	3 CI
4.0158 CH ₃ CH ₃ O	OCH ₃ NC(O)C(CH ₃)	3 CI
	H ₂ CH ₃ NC(O)C(CH ₃)	3 Cl
4.0160 CH ₃ CH ₃ OC		
4.0161 CH ₃ CH ₃	OH CH₂	Br
4.0162 CH ₃ CH ₃ C	OCH₃ CH₂	Br
4.0163 CH₃ CH₃ OC	CH ₂ CH ₃ CH ₂	Br
4.0164 CH ₃ CH ₃ OC	C(CH ₃) ₂ CH ₂	Br
4.0165 CH ₃ CH ₃	OH CH ₂ CH ₂	Br
4.0166 CH₃ CH₃ C	OCH ₃ CH ₂ CH ₂	Br
4.0167 CH ₃ CH ₃ OC	CH ₂ CH ₃ CH ₂ CH ₂	Br
4.0168 CH₃ CH₃ OC	C(CH ₃) ₂ CH ₂ CH ₂	Br
4.0169 CH ₃ CH ₃	ОН О	Br
4.0170 CH ₃ CH ₃ (OCH₃ O	Br
4.0171 CH ₃ CH ₃ OC	CH₂CH₃ O	Br
4.0172 CH ₃ CH ₃ OC	C(CH ₃) ₂ O	Br see Preparation Example P6
4.0173 CH ₃ CH ₃	OH NSO ₂ CH ₃	Br
4.0174 CH ₃ CH ₃ (OCH ₃ NSO ₂ CH ₃	Br
4.0175 CH ₃ CH ₃ OC	CH ₂ CH ₃ NSO ₂ CH ₃	Br ·
4.0176 CH ₃ CH ₃ O	$C(CH_3)_2$ NSO ₂ CH ₃	Br
4.0177 CH ₃ CH ₃	OH NC(O)C(CH ₃) ₃ Br
4.0178 CH ₃ CH ₃	OCH ₃ NC(O)C(CH ₃) ₃ Br
4.0179 CH ₃ CH ₃ O	CH2CH3 NC(O)C(CH3) ₃ Br
4.0180 CH ₃ CH ₃ O	$C(CH_3)_2$ NC(O)C(CH ₃	
4.0181 H H	он 'с	H ¹ H NMR (300 MHz; CDCl ₃) ŏ 6.30 (sxm, 2H); 3.60 (d, 1H); 3.23 (d, 1H); 2.82 (s, 1H); 0.75 (m, 4H); tautomeric form Db

No.	R₁	R ₂	R₃	Υ		hysical data
4.0182	Н	Н	ОН	C(=C(CH ₃) ₂)	2	H NMR (300 MHz; CDCl₃) δ 6.82 (sxm, 2H); 4.14 (sxm, H); 3.60 (d, 1H); 3.13 (d, 1H); 1.75 (s, 6H); automeric form Db
4.0183	Н	Н	ОН	CH ₂ CH(COOCH ₃)	H F	R ₇ = Br, see Preparation Example P13
4.0184	Н	Н	ОН	CH₂CH(COOCH₃)	H F	R ₇ = CH

Table 5: Intermediates of formulae VII:

$$R_3$$
 R_4 X_4 X_4

No.	R ₁	R ₂	R ₃	R ₄	Y	Xa Physical data
5.0000	Н	Н	OCH ₃	OCH₃	CH₂	Н
5.0001	Н	Н	OCH ₂ CH ₃	OCH ₂ CH ₃	CH₂	Н
5.0002	Н	Н	-OCH ₂	CH ₂ O-	CH₂	H see Example P8
5.0003	Н	Н	OCH₃	OCH₃	0	Н
5.0004	Н	Н	OCH ₂ CH ₃	OCH ₂ CH ₃	0	Н
5.0005	Н	Н	-OCH ₂	CH ₂ O-	0	Н
5.0006	Н	Н	OCH ₃	OCH₃	NSO₂CH₃	Н
5.0007	Н	Н	OCH ₂ CH ₃	OCH ₂ CH ₃	NSO₂CH₃	Н
5.0008	Н	Н	-OCH	₂CH₂O-	NSO₂CH₃	Н
5.0009	Н	Н	OCH₃	OCH₃	NC(O)C(CH ₃) ₃	Н
5.0010	Н	Н	OCH₂CH₃	OCH ₂ CH ₃	$NC(O)C(CH_3)_3$	Н
5.0011	Н	Н	-OCH	₂ CH ₂ O-	$NC(O)C(CH_3)_3$	Н
5.0012	Н	Н	OCH ₃	OCH₃	CH₂CH₂	Н
5.0013	Н	Н	OCH₂CH₃	OCH ₂ CH ₃	CH₂CH₂	Н
5.0014	Н	Н	-OCH	₂ CH ₂ O-	CH ₂ CH ₂	Н
5.0015	Н	Н	OCH₃	OCH₃	CH ₂	CI
5.0016	Н	Н	OCH₂CH₃	OCH ₂ CH ₃	CH₂	Cl
5.0017	Н	Н	-OCH	₂CH₂O-	CH ₂	Cl

No.	R ₁	R ₂	R ₃	R ₄	Υ	Xa Physical data
5.0018	Н	Н	OCH₃	OCH₃	0	Cl
5.0019	Н	Н	OCH₂CH₃	OCH₂CH₃	0	CI
5.0020	Н	Н	-OCH₂0	CH₂O-	0	CI
5.0021	Н	Н	OCH₃	OCH₃	NSO₂CH₃	CI
5.0022	Н	Н	OCH ₂ CH ₃	OCH ₂ CH ₃	NSO ₂ CH₃	Cl
5.0023	Н	Н	-OCH₂(CH₂O-	NSO₂CH₃	CI
5.0024	Н	Н	OCH₃	OCH₃	NC(O)C(CH ₃) ₃	CI
5.0025	Н	Н	OCH₂CH₃	OCH₂CH₃	NC(O)C(CH ₃) ₃	Cl
5.0026	Н	Н	-OCH ₂	CH₂O-	NC(O)C(CH ₃) ₃	Cl
5.0027	Н	Н	OCH₃	OCH₃	CH ₂ CH ₂	CI
5.0028	Н	Н	OCH₂CH₃	OCH₂CH₃	CH ₂ CH ₂	Cl
5.0029	Н	Н	-OCH ₂	CH ₂ O-	CH ₂ CH ₂	Cl
5.0030	Н	Н	OCH₃	OCH₃	CH₂	Br
5.0031	Н	Н	OCH ₂ CH ₃	OCH₂CH₃	CH ₂	Br
5.0032	Н	Н	-OCH ₂	CH₂O-	CH ₂	Br
5.0033	Н	Н	OCH₃	OCH₃	0	Br
5.0034	Н	Н	OCH₂CH₃	OCH ₂ CH ₃	0	Br
5.0035	Н	Н	-OCH ₂	₂CH₂O-	0	Br
5.0036	Н	Н	OCH₃	OCH₃	NSO₂CH₃	Br
5.0037	Н	Н	OCH ₂ CH ₃	OCH ₂ CH ₃	NSO₂CH₃	Br
5.0038	Н	Н	-OCH	₂ CH ₂ O-	NSO ₂ CH₃	Br
5.0039	Н	н	OCH₃	OCH₃	NC(O)C(CH ₃) ₃	Br
5.0040	Н	Н	OCH₂CH₃	OCH ₂ CH ₃	NC(O)C(CH ₃) ₃	Br
5.0041	Н	Н	-OCH	₂ CH ₂ O-	NC(O)C(CH ₃) ₃	Br
5.0042	н	Н	OCH₃	OCH₃	CH₂CH₂	Br
5.0043	Н	Н	OCH₂CH₃	OCH₂CH₃	CH₂CH₂	Br
5.0044	Н	Н	-OCH	₂CH₂O-	CH₂CH₂	Br
5.0045	Н	CH₃	OCH ₃	OCH ₃	CH₂	Н
5.0046	Н	CH₃	OCH₂CH₃	OCH₂CH₃	CH₂	Н
5.0047	Н	СН₃	-OCH	l₂CH₂O-	CH₂	Н
5.0048	Н	CH₃	OCH ₃	OCH₃	О	Н
5.0049	Н	CH₃	OCH ₂ CH ₃	OCH ₂ CH ₃	0	Н
5.0050	. Н	CH₃	-OCH	I ₂ CH ₂ O-	0	Н

-	No.	R ₁	R ₂	R ₃	R ₄	Υ	Xa Physical data
_	5.0051	H	CH₃	OCH ₃	OCH₃	NSO₂CH₃	Н
	5.0052	Н	CH₃	OCH₂CH₃	OCH₂CH₃	NSO₂CH₃	Н
	5.0053	Н	CH₃	-OCH₂	CH₂O-	NSO₂CH₃	Н
	5.0054	Н	СН₃	OCH ₃	OCH₃	NC(O)C(CH ₃) ₃	Н
	5.0055	Н	СН₃	OCH ₂ CH ₃	OCH₂CH₃	NC(O)C(CH ₃) ₃	Н
	5.0056	Н	CH₃	-OCH ₂	CH ₂ O-	NC(O)C(CH ₃) ₃	Н
	5.0057	н	СН₃	OCH₃	OCH ₃	CH ₂ CH ₂	Н
	5.0058	, H	CH₃	OCH ₂ CH ₃	OCH ₂ CH ₃	CH ₂ CH ₂	Н
	5.0059	Н	CH₃	-OCH ₂	cH₂O-	CH₂CH₂	Н
	5.0060	Н	CH₃	OCH₃	OCH ₃	CH ₂	CI
	5.0061	Н	CH₃	OCH ₂ CH ₃	OCH₂CH₃	CH ₂	CI
	5.0062	Н	СН₃	-OCH	₂CH₂O-	CH ₂	Cl
	5.0063	Н	CH₃	OCH₃	OCH₃	0	CI
	5.0064	н	CH ₃	OCH₂CH₃	OCH ₂ CH ₃	0	CI
	5.0065	Н	CH₃	-OCH	₂CH₂O-	0	CI
	5.0066	н	CH₃	OCH₃	OCH₃	NSO₂CH₃	CI
	5.0067	Н	CH₃	OCH₂CH₃	OCH ₂ CH ₃	NSO₂CH₃	Cl
	5.0068	Н	CH₃	-OCH	₂ CH ₂ O-	NSO₂CH₃	Cl
	5.0069	Н	CH₃	OCH₃	OCH₃	NC(O)C(CH ₃) ₃	CI
	5.0070	Н	CH₃	OCH ₂ CH ₃	OCH₂CH₃	NC(O)C(CH ₃) ₃	CI
	5.0071	Н	CH₃	-OCH	l₂CH₂O-	NC(O)C(CH ₃) ₃	CI
	5.0072	Н	CH₃	OCH₃	OCH₃	CH₂CH₂	CI
	5.0073	Н	CH₃	OCH₂CH₃	OCH ₂ CH ₃	CH₂CH₂	CI
	5.0074	Н	CH₃	-OCH	I₂CH₂O-	CH₂CH₂	Cl
	5.0075	Н	CH₃	OCH₃	OCH₃	CH ₂	Br
	5.0076	Н	CH₃	OCH₂CH₃	OCH ₂ CH ₃	CH₂	Br
	5.0077	Н	CH₃	-OCH	H ₂ CH ₂ O-	CH₂	Br
	5.0078	Н	CH₃	OCH₃	OCH₃	0	Br
	5.0079	Н	CH₃	OCH ₂ CH ₃	3 OCH2CH3	0	Br
	5.0080	Н	CH ₃	-OCI	H ₂ CH ₂ O-	0	Br
	5.0081	Н	CH	OCH₃	OCH₃	NSO₂CH₃	Br
	5.0082	Н	CH	OCH ₂ CH	3 OCH2CH3	NSO₂CH₃	Br
	5.0083	Н	CH	-OCI	H₂CH₂O-	NSO₂CH₃	Br

No.	R ₁	R ₂	R ₃	R ₄	Υ		Physical data
5.0084	Н	CH₃	OCH ₃	OCH₃	NC(O)C(CH ₃) ₃	Br	
5.0085	Н	CH ₃	OCH₂CH₃	OCH₂CH₃	NC(O)C(CH ₃) ₃	Br	
5.0086	Н	CH₃		CH₂O-	NC(O)C(CH ₃) ₃	Br	
5.0087	Н	CH ₃	OCH₃	OCH₃	CH₂CH₂	Br	
5.0088	Н	CH ₃	OCH ₂ CH ₃	OCH ₂ CH ₃	CH ₂ CH ₂	Br	4
5.0089	Н	CH ₃	-OCH ₂	CH ₂ O-	CH₂CH₂	Br	
5.0090	CH₃	CH ₃	OCH₃	OCH ₃	CH ₂	Н	
5.0091	CH₃	CH₃	OCH ₂ CH ₃	OCH ₂ CH ₃	CH₂	Н	
5.0092	CH ₃	CH₃	-OCH ₂	CH ₂ O-	CH₂	Н	
5.0093	CH₃	CH₃	OCH ₃	OCH₃	0	Н	see Example P5
5.0094	CH₃	CH ₃	OCH ₂ CH ₃	OCH ₂ CH ₃	0	Н	
5.0095	CH ₃	CH₃	-OCH	₂ CH ₂ O-	0	Н	
5.0096	СН₃	CH₃	OCH₃	OCH₃	NSO ₂ CH ₃	Н	
5.0097	CH ₃	CH ₃	OCH₂CH₃	OCH₂CH₃	NSO₂CH₃	Н	
5.0098	CH₃	CH₃	-OCH	₂CH₂O-	NSO₂CH₃	Н	
5.0099	CH₃	CH₃	OCH₃	OCH₃	NC(O)C(CH ₃) ₃	Н	
5.0100	CH₃	CH₃	OCH₂CH₃	OCH₂CH₃	$NC(O)C(CH_3)_3$	Н	
5.0101	СН₃	СН₃	-OCH	₂ CH ₂ O-	$NC(O)C(CH_3)_3$	Н	
5.0102	CH₃	СН₃	OCH₃	OCH₃	CH₂CH₂	Н	
5.0103	CH₃	CH₃	OCH ₂ CH ₃	OCH₂CH₃	CH ₂ CH ₂	Н	
5.0104	СН₃	CH₃	-OCH	l₂CH₂O-	CH₂CH₂	Н	
5.0105	CH₃	CH₃	OCH ₃	OCH ₃	CH₂	CI	
5.0106	CH₃	CH₃	OCH₂CH₃	OCH ₂ CH ₃	CH₂	CI	
5.0107	CH₃	CH₃	-OCH	I₂CH₂O-	CH₂	CI	
5.0108	CH₃	CH₃	OCH ₃	OCH₃	0	CI	see Example P3
5.0109	CH₃	СН₃	OCH₂CH ₃	OCH ₂ CH ₃	0	CI	
5.0110	CH₃	CH₃	-OCH	H₂CH₂O-	0	CI	
5.0111	CH₃	CH₃	OCH ₃	OCH ₃	NSO₂CH₃	CI	
5.0112	СН₃	CH₃	OCH₂CH;	3 OCH2CH3	NSO₂CH₃	C	l
5.0113	CH₃	CHa	-OCH	H ₂ CH ₂ O-	NSO₂CH₃	C	1
5.0114	CH₃	CH	OCH₃	OCH₃	NC(O)C(CH ₃):	3 C	i
5.0115	CH₃	CH	OCH₂CH	3 OCH2CH3	NC(O)C(CH ₃)	3 C	
5.0116	CH₃	CH	-OCI	H ₂ CH ₂ O-	NC(O)C(CH ₃)	_з С	1

No.	R ₁	R ₂	R ₃	R ₄	Y	Xa Physical data
5.0117	CH ₃	CH ₃	OCH ₃	OCH ₃	CH ₂ CH ₂	Cl
5.0118	CH ₃	CH ₃	OCH ₂ CH ₃	OCH₂CH₃	CH₂CH₂	Cl
5.0119	CH₃	CH₃	-OCH	₂ CH ₂ O-	CH₂CH₂	Cl
5.0120	CH ₃	CH ₃	OCH₃	OCH₃	CH₂	Br
5.0121	CH₃	CH₃	OCH ₂ CH ₃	OCH ₂ CH ₃	CH₂	Br
5.0122	CH₃	CH₃	-OCH	₂ CH ₂ O-	CH₂	Br
5.0123	CH ₃	CH₃	OCH₃	OCH₃	0	Br
5.0124	CH₃	CH ₃	OCH ₂ CH ₃	OCH₂CH₃	0	Br
5.0125	CH₃	CH₃	-OCH	₂ CH ₂ O-	0	Br
5.0126	CH₃	CH₃	OCH ₃	OCH₃	NSO₂CH₃	Br
5.0127	CH₃	CH₃	OCH ₂ CH ₃	OCH ₂ CH ₃	NSO₂CH₃	Br
5.0128	CH₃	CH₃	-OCH	₂ CH ₂ O-	NSO₂CH₃	Br
5.0129	CH₃	CH ₃	OCH₃	OCH₃	$NC(O)C(CH_3)_3$	Br
5.0130	CH₃	CH ₃	OCH ₂ CH ₃	OCH ₂ CH ₃	$NC(O)C(CH_3)_3$	Br
5.0131	CH₃	CH₃	-OCH	I₂CH₂O-	NC(O)C(CH ₃) ₃	Br
5.0132	CH₃	CH₃	OCH₃	OCH ₃	CH₂CH₂	Br
5.0133	CH₃	CH ₃		OCH ₂ CH ₃	CH₂CH₂	Br
5.0134	CH₃	CH₃	-OCH	I₂CH₂O-	CH₂CH₂	Br
5.0135	Н	Н	-OCH	I₂CH₂O-	'c 	CI Amorphous crystals

Table 6: Intermediates of formula VI:

No.	A ₁	A ₂	R₁	R ₂		Xa Physical data
6.0000) CH	СН	Н	Н	C(=CH(OAc))	Cl major isomer i: ¹ H NMR (300 MHz; CDCl ₃) δ 7.12 (s, 1H); 6.77 (dxd, 1H); 6.35 (dxd, 1H); 4.02 (d, 1H); 3.95 (d, 1H); 2.18 (s, 3H).
6.000	CH	СН	Н	Н	C(=CH(OAc))	CI minor isomer II: ¹ H NMR (300 MHz; CDCl ₃) 5 7.14 (s, 1H); 6.84 (dxd, 1H); 6.29 (dxd, 1H); 4.55 (d, 1H); 3.54 (d, 1H); 2.19 (s, 3H).

Biological Examples

Example B1: Herbicidal action prior to emergence of the plants (pre-emergence action) Monocotyledonous and dicotyledonous test plants are sown in standard soil in plastic pots. Immediately after sowing, the test compounds, in the form of an aqueous suspension (prepared from a 25 % wettable powder (Example F3, b) according to WO 97/34485) or in the form of an emulsion (prepared from a 25 % emulsifiable concentrate (Example F1, c)), are applied by spraying in a concentration corresponding to 125 g or 250 g of active ingredient/ha (500 litres of water/ha). The test plants are then grown in a greenhouse under optimum conditions. After a test duration of 3 weeks, the test is evaluated in accordance with a scale of ten ratings (10 = total damage, 0 = no action). Ratings of from 10 to 6 (especially from 10 to 8) indicate good to very good herbicidal action. The compounds of formula I exhibit strong herbicidal action in this test. Examples of the good herbicidal action of the compounds are given in Table B1:

Table B1: Pre-emergence herbicidal action:

,	Ex. No.	gr/ha	Panicum	Echinochloa	Abutilon	Amaranthus	Chenopodium	Kochia
	1.0301	250	7	7	7	8	9	8
	1.0411	250	10	9	10	10	10	10

Example B2: Post-emergence herbicidal action

In a greenhouse, monocotyledonous and dicotyledonous test plants are grown in standard soil in plastic pots and at the 4- to 6-leaf stage are sprayed with an aqueous suspension of the test compounds of formula I prepared from a 25 % wettable powder (Example F3, b) according to WO 97/34485) or with an emulsion of the test compounds of formula I prepared from a 25 % emulsifiable concentrate (Example F1, c) according to WO 97/34485), in a concentration corresponding to 125 g or 250 g of active ingredient/ha (500 litres of water/ha). The test plants are then grown on in a greenhouse under optimum conditions. After a test duration of about 18 days, the test is evaluated in accordance with a scale of ten ratings (10 = total damage, 0 = no action). Ratings of from 10 to 6 (especially from 10 to 7) indicate good to very good herbicidal action. The compounds of formula I exhibit a strong herbicidal action in this test. Examples of the good herbicidal action of the compounds are given in Table B2:

Table B2: Post-emergence herbicidal action:

Ex. No.	gr/ha	Abutilon	Ipomea	Amaranthus	Chenopodium	Stellaria	Abutilon
1.0301	250	9	8	8	8	88	88
1.0411		9	10	9	10	9	9
1.1153	250	7	8	7	88	10	8

Example B3: Comparison test with a compound from the prior art: post-emergence herbicidal action:

The post-emergence herbicidal action of compound No. 1.0411 according to the invention is compared with compound "A" from WO 01/94339:

Table B3: Post-emergence action:

 Ex. No.	gr/ha	Brachiaria	Rottboelia	Sida	Polygonum	Sinapis	Galium
 1.0411		10	3	8	8	8	, 6
Α	15	4	0	7	5	6	5

It can be seen from Table B3 that compound No. 1.0411 according to the invention at a rate of application of 15 g/ha exhibits considerably better herbicidal action on the weeds than compound "A" from the prior art. This enhanced action was not to be expected in view of the structural similarity of the compounds.